COMMODORE USER

September 1985

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SUPERMAN –THE GAME
EXCLUSIVE PREVIEW WITH CLARK KENT

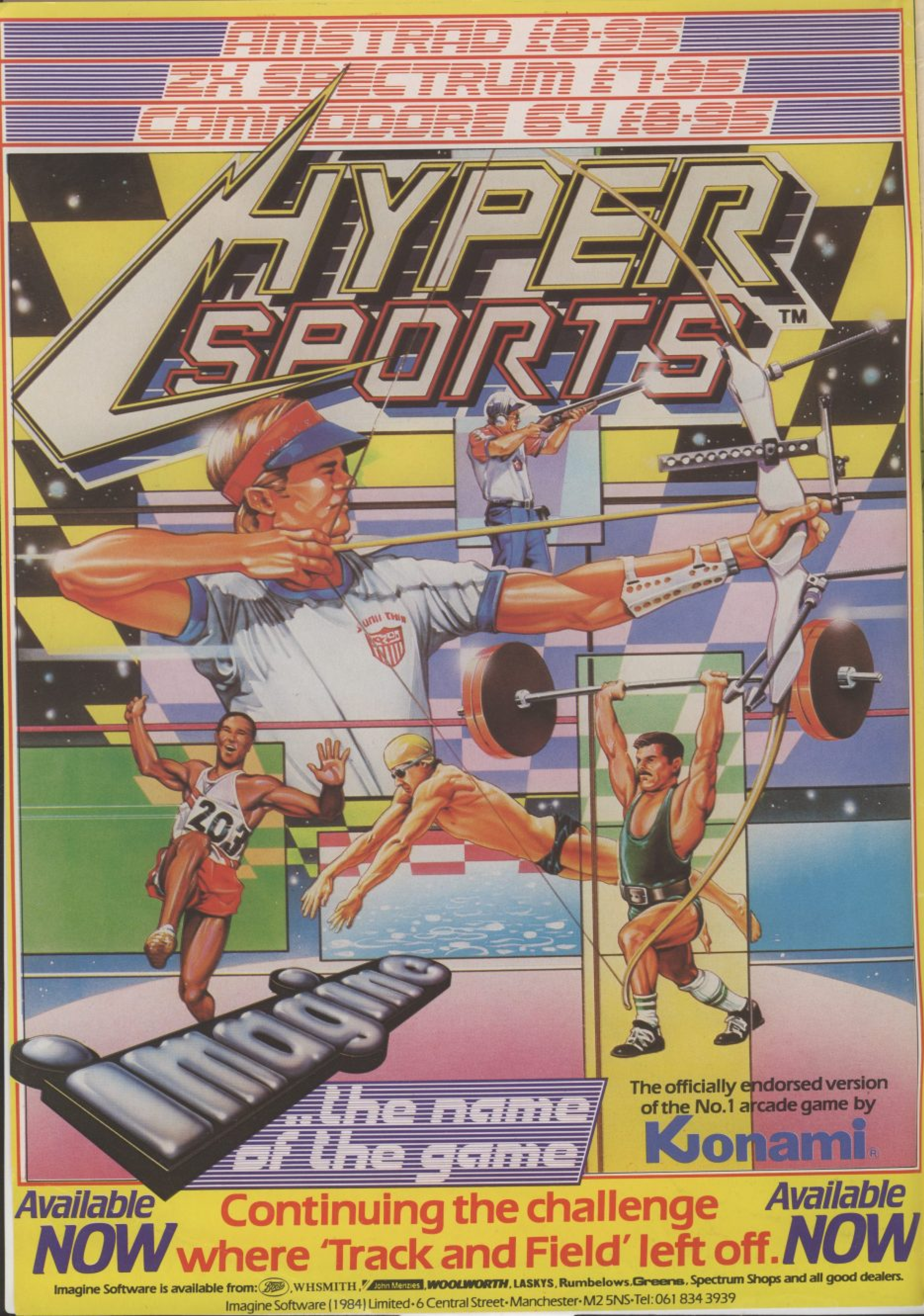
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A TASTE OF THE ORIENT

Having exhausted the world of sport and shot everything in sight, software houses are turning their attention to the Far East. By this winter homes may well be full of Ninjas, Kung Fu exponents and Samurai.

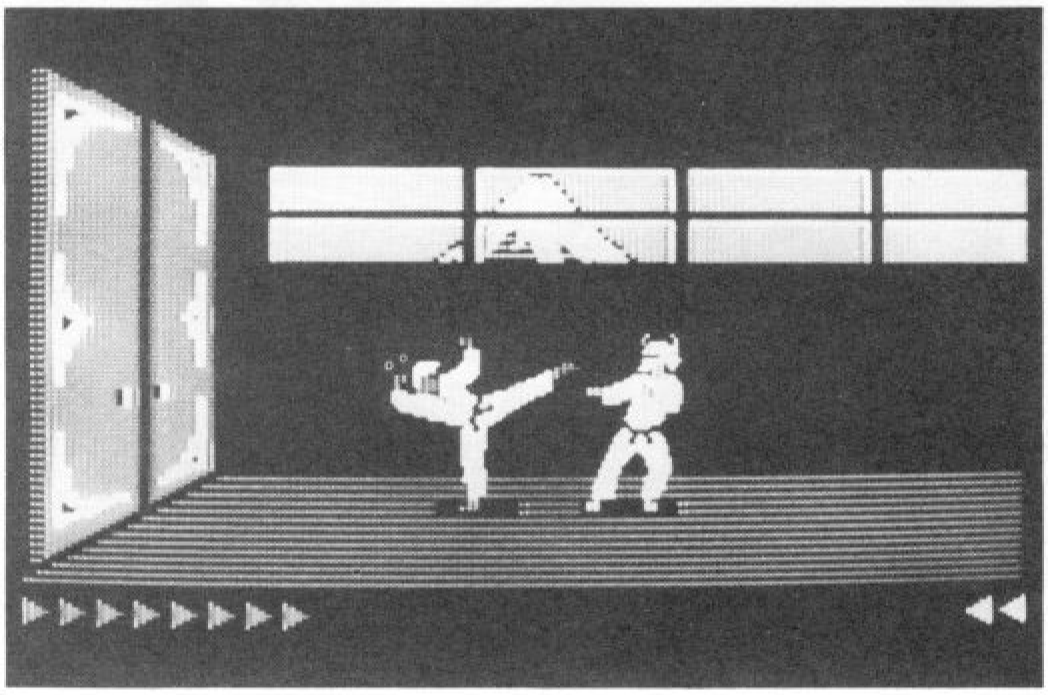
In the wake of Melbourne House's success with *Way of the Exploding Fist*, System 3 have developed *International Karate*. The game takes you around the world fighting competitions in London, Rio, Sydney, Egypt and New York. The winner of each bout faces bonus tests throwing stars, fighting with nunchaku (rice flails) and chopping through blocks.

Mark Kale of System 3 claims that: "Once you've played it you won't want to go back to the Exploding Fist." We're reserving judgement because Fist is the best screen action we've seen since Grace Jones walloped Russell Harty.

Imagine leap into the self defence fray in September with another Konami conversion *Yie Ar Kung-Fu*.

System 3 also have an arcade adventure on the way entitled *The Last Ninja*. In this game, you feature as the eponymous character, an assassin who is on the hunt for some sacred scriptures that hold the key to eternal youth. It features some sixty locations and 500 screens! You work your way through numerous scenarios like the Wilderness and The Palace Gardens to assassinate the Shogun, or military ruler, and get those scriptures.

That brings us neatly to Virgin's new game, based on the mega bestselling novel Shogun, an everyday tale of power and corruption in mediaeval Japan. The aim is to work your way up, by hook or by Kendo staff to the throne in the Shogun's palace. You have the choice of any of 24 characters all of whom possess different traits and abilities.



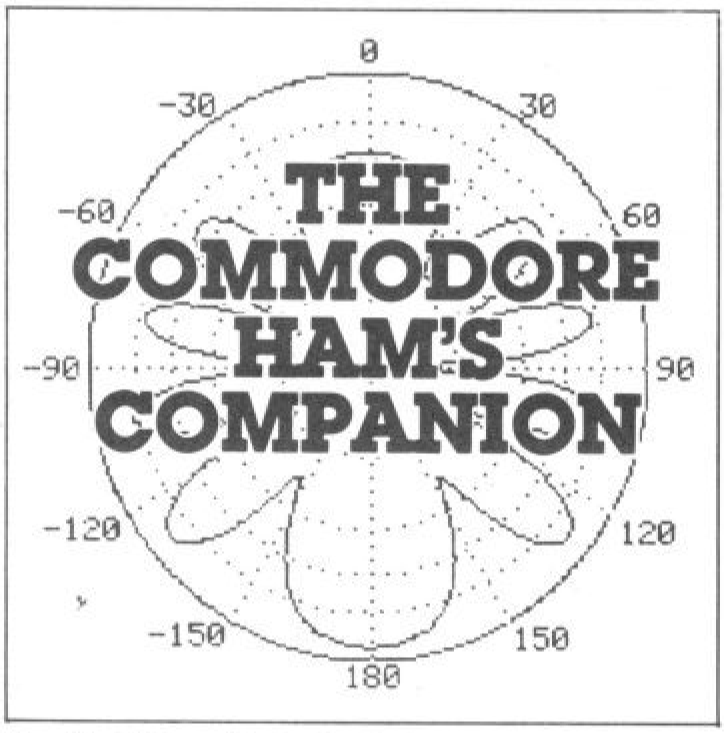
Once you've chosen a character you progress through the 120 screens buying power, friendship and allies, and knocking off anyone who gets in the way. Sounds like good clean fun.

The graphic style will be based on Japanese art and the action is set in a huge landscape of rivers, temples and mountain ranges. It's all programmed by Virgin's Gang and, in particular Steve Lee who was responsible for *Falcon Patrol*.

The other title to bring you arcade action with an oriental flavour is *Karateka*, a Broderbund game currently topping the US charts. This is another arcade adventure based around the martial arts. You are a Karateka, that is, a karate expert, and you return from your travels to find out that your village has been taken over by an evil warlord who has built his palace on a hill overlooking the village and abducted your girl (a princess, of course).

You are understandably a little peaved about the whole business so you break into the palace with the aim of overpowering the warlord and getting your girl back. To achieve this you must first defeat the many guards who block your route. Sounds like god swashbuckling stuff to us.

We'll be reviewing all these titles, our reflexes sharpened by playing continually, just as soon as they're made available (probably late Autumn). In the meantime Shogun is over a thousand pages long so get reading to pick up the mood.



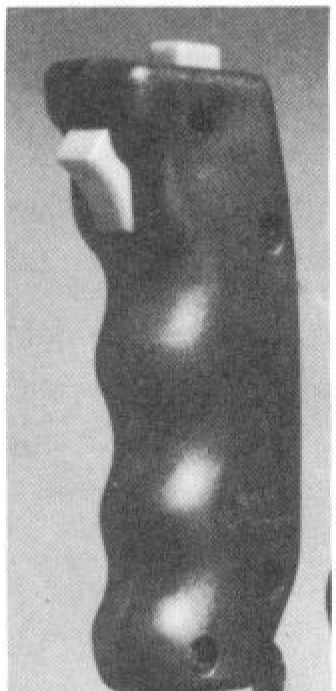
Calling all radio hams. Jim Grubbs (K9EI), the man responsible for our recent series for radio hams, has gone one better. He's written a book specially for amateur radio enthusiasts who use a Commodore.

Called the *The Commodore Ham's Companion*, it looks like being an invaluable guide to sources for Commodore-related radio hardware and software. There's also an extensive bibliography of reviews and magazine articles covering Commodore machines in the ham-shack (our Micro-Wave Radio series gets a mention).

As yet, the book is available only from the States costing 16 dollars, from QSky, Publishing, PO Box 3042, Springfield, Illinois 62708.

STICKING POINT

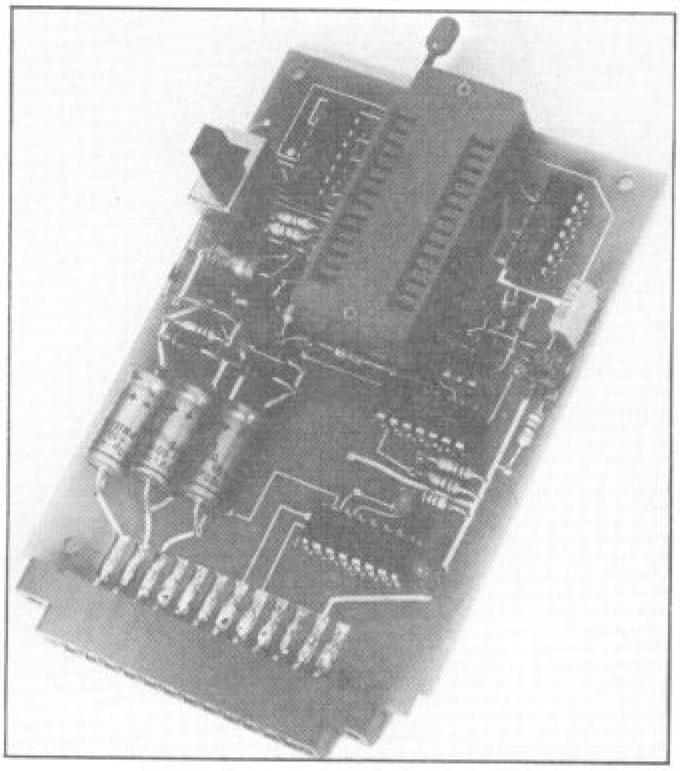
Does the world need another joystick? Well, it's got one anyway. 'The Stick' is a one-hand, baseless joystick imported from West Germany by Merseyside company Lightwave Leisure.



Unlike most joysticks, its mechanism has tilt switches filled with mercury. When moved to one side, the mercury touches two contacts. Lightwave claim it's highly sensitive, particularly on sports simulations. Whatever the claim, the Stick shouldn't wear out as quickly as conventional models.

Having tested it on two of this month's Screen Scene games *Mig Alley Ace* and *Hypersports*, we've found that you rather have to accentuate your movements. During the hectic combat of *Mig Alley Ace* it proved too light and airy to be responsive. For games that need finely tuned movements it's just not precise enough, but it should prove itself worthy of fast-action zappers. The Stick costs £12.99, and you can get more details on: 051 639 5050.

DIY CARTRIDGES



Cartridges may take the drudgery out of loading on your 64, but did you know that you can actually produce your own, and put your software on them?

The device you'll need is called an EPROM burner. EPROMs are chips that, when programmed, retain data even when your 64 is turned off. They can be erased too — but that's another story.

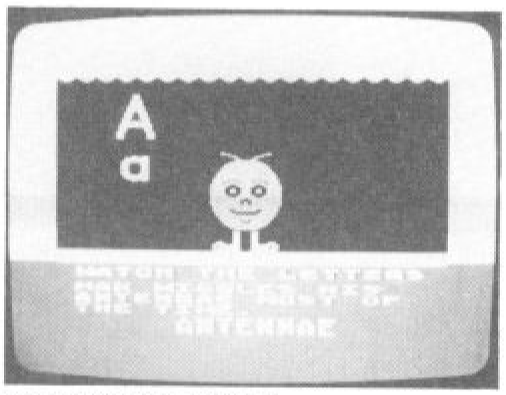
Trouble is EPROM burners have, until now, been scarce and rather expensive. That may be set to change with the new EPROM burner from *Lightwave Leisure*, which costs just £54.95. Lightwave also produce two motherboards (8K and 128K), for mounting EPROMS to be plugged into the cartridge port. These cost £12.95 and £34.95 respectively. Both devices accept all the most popular EPROM types and some complete with instructions, operating and control software. More details on 051 639 5050.

PROGRAMS FOR SMARTIES

There's been a dearth of educational programs for the Commodore 64 just lately. But McGraw-Hill and Beyond Software seem to be plugging the gap with programs mainly for tiny tots.

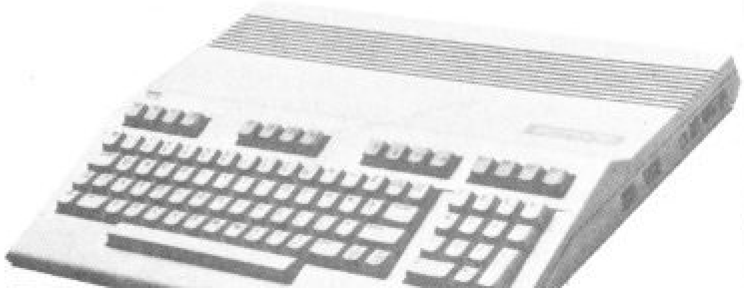
McGraw-Hill is plugging in a big way by releasing not just one but 28 titles for children aged between 3 and 13. The tapes cost £7.95 and include the usual topics of elementary maths, use of alphabet and words, problem solving and shapes. M-H claim the modules are "methodologically sound", were written by teachers and are designed for use both in school and at home. Sounds good, anyway. More details on 0628 23432.

Meanwhile, Beyond has released *I Love My Alphabet*, in the *Romper Room* series. Featuring a weird little character called Max, the program helps to teach 2-7 year olds the alphabet, basic word skills, word association (Max acts out the word you choose) and a little about computers themselves. There's four levels of play depending on the child's age. The program costs £9.95 and is available only on tape. Beyond is on 01-837 2899.



Beyond's Romper Room

COMPETITION WINNERS



The response to our C-128 competition was phenomenal. We had sacks full of entries from those of you eager to get your hands on Commodore's new baby. Let the trumpets sound for the winner, the proud owner-to-be Mr P J D Lambshead of Rainham in Kent. Well done, sir, your computer will be on its way just as soon as we've finished playing around with it. No, just kidding . . . as soon as we have it. Winners of July's Hotshots Competition should also be receiving their Gates of Dawn tapes soon. The answer by the way, was Sir Walter Scott.

Shorts

Girls win the prizes: So you thought girls weren't clued up about computing? Well, think again. Girls took all the winners' prizes in the recent National Essay Competition, sponsored by Commodore and the Equal Opportunities Commission. Essay titles included "provocative" subjects like: "Are computers boys toys?". All winners received a Commodore 16 for themselves and a 64 for their schools, by the way, all the judges were women — a case of positive discrimination?

Shorts

Shadowfire tuner: Beyond Software has just announced a 'tuner' for its chart-topping *Shadowfire* icon-driven adventure. A what? It's a program on tape that lets you alter the variables in the game: things like strength, range of weapons and patrol routes of guards. You can even resurrect Kyxix and map the Zoff V spaceship. We'll be checking it out next month and giving you details of how to get one on the cheap. So you'd better stay, er, tuned.

Shorts

Typing with Pitman: Century Publications has now adapted its BBC micro *Typing Tutor* program (from the Lupton and Robinson duo) for the Commodore 64. Produced in conjunction with typing experts Pitman, it includes a cassette, 20-page manual and uses some of the standard Pitman exercises. You get the lot for £12.95. What with a similar program from Precision (reviewed last month), typing is becoming more popular than Pacman. More details on 01-434 4241.

Shorts

Guide to Pascal: Ian Sinclair, the man who's probably written more books (on computers) than Dickens, has bashed out yet another tome. This one's called *The Official Guide to Oxford Pascal*, the aforementioned being Oxford Computer Systems' implementation of the Pascal language for the Commodore 64. Apparently, he was so impressed by it, he felt it deserved a guide — that's what the blurb says anyway. Pascal boffins should find it in the shops by the beginning of September, priced at £7.95.

Shorts

Gooch on disk: Audiogenic is offering its Graham Gooch Test Cricket Game on disk, for £11.95, in response to requests from what it calls "frustrated disk owners". Trouble is, now that the bat 'n' ball season is coming to an end, it may be too late. Cricketing enthusiasts contact Audiogenic on 0734 664646.

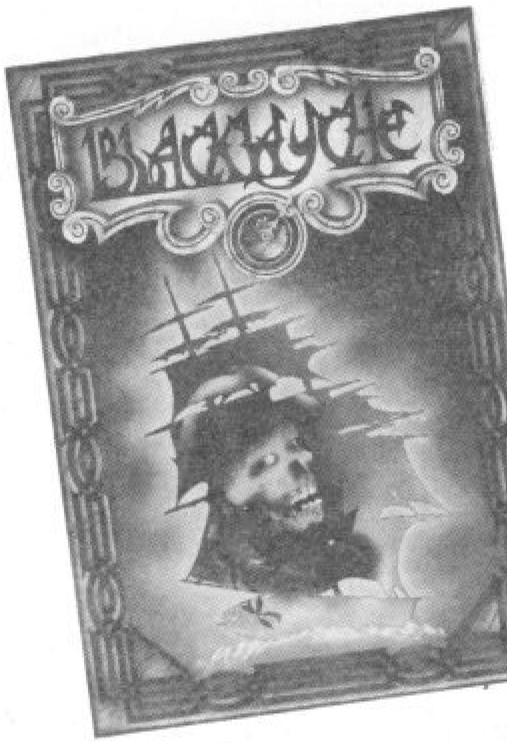
ULTIMATE LOST AT SEA

Top software house Ultimate have released a new game for the 64. It's another arcade adventure and continues the exploits of Sir Arthur Pendragon, hero of *Staff of Karnath* and *Entombed*.

The game is entitled *Blackwyche* and it's set on board a mysterious galleon the intrepid explorer finds floating Marie Celeste-like on the seas.

On investigating the deserted hulk Pendragon finds the captain's log which provides clues as to the crew's fate and, of course the ultimate dodgy poem. The verse hints at lost souls and warns of a horrible fate.

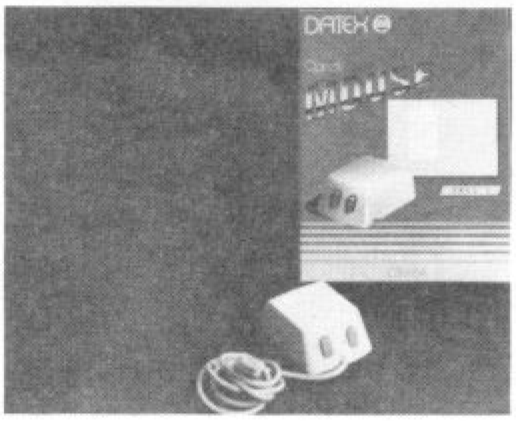
As Pendragon you must explore the hulk's decks to discover and free the imprisoned soul of the ship's captain. Ultimate promise all the usual characteristics, superb animation, enchanting tunes, and compelling gameplay. The game sells for £9.95 and is available now.



ROVING RODENT

Yet another 'mouse' has appeared for the Commodore 64. This one's an optical device from Datex, its main aim in life being to transform your 64 into an Apple Macintosh lookalike. It comes with sophisticated graphics software on both tape and disk. The price, though, is a whopping £74.95.

The software gives a Mac-like screen display complete with icons and pull-down menus. Designs can be loaded and saved on disk and can output to an Epson or compatible printer through its built-in interface software. We'll be reviewing it next month. Meanwhile, more details from EEC Distribution Services on 01-441 1590.



DISK DRIVE FROM CUMANA

Following last month's revelation about the Enhancer 2000, a Commodore-compatible disk drive from the States, *Cumana* ("the best name in memory") has announced that it is also working on a similar product.

Hawk-eyed punters at the recent Commodore Show will have spotted a Cumana drive linked to a Commodore 64 — although no information could be gleaned about it.

"We're currently working on two alternative models but haven't made a final decision yet", reveals Cumana marketing man Clive Martin. The options are a standard speed drive with optional 'turbo' add-on, or a straight go-faster product. Whatever the choice, a drive should be in the shops by the end of September and should be cheaper than the 1541.

Meanwhile back to the Enhancer 2000 which seems to be dogged by problems. Its US manufacturer decided to release it in the UK with a go-faster chip which they duly despatched to UK distributor Commotion. But the airline managed to lose them, leading to frantic calls for more. When chips finally arrived, they wouldn't work. Back to the drawing board.

STOP PRESS

EARLY LAUNCH FOR 128

Large stocks of the C-128 should be available in the shops within days of this issue hitting the stands. That's a whole month ahead of schedule, something of an achievement in an industry that tends to shout loud first and deliver (much) later.

Another surprise is that the 128, now being dubbed as "the world's first three-in-one computer", will cost only £269 — about £30 cheaper than the £300 figure that pundits were readily quoting.

Commodore also boldly asserts that the machine will be launched together with the new 1571 disk drive, the new MPS 803 printer and the new monitor. Sounds too good to be true? We wait and see.

PHONE HOME

If you're not happy about the reviews you're reading — not ours of course — there's now a new way of getting a second opinion.

Review Line is a telephone service run by fourteen-year-old Christopher Johnson of Galashiels. Open between 6 and 9pm seven days a week it allows you to phone up and get a review — be it software, peripherals or utilities — for free.

So far there's only a limited number of titles available, but software houses are showing an interest. Companies to respond so far include Firebird, Virgin and Domark. For a regular fee each month Review Line will pass on their thoughts to the public.

Asked for his opinion of *Elite*, Chris replied that it had lots to do but was a little slow at times. He gave it an 8/10 rating. We asked him what would happen when his parents got annoyed by the phone being engaged all the time. "Get a couple more", was the reply. So now there's some serious competition out there . . .

Shorts

Copping the pirates: Now that the Copyright (Computer Software) Amendment Act has become law, it should inspire organisations like FAST (Federation Against Software Theft) and GOSH (Guild of Software Houses) to renew their pirate zapping. Apart from clarifying how and where copyright subsists on software, the Act establishes piracy as a criminal offence incurring fines of up to £2000 and/or imprisonment for up to two years. FAST is already girding its loins by employing a former police chief, Bob Hay, as its enforcement co-ordinator. Over and out.

Anyone who's seen the Commodore Amiga, read its specification, noted down its price will admit that this really is the machine we've always wanted but nobody's managed to provide before.

Even a brief round-up of the Amiga's facilities is awe inspiring. It's very fast, has plenty of memory, can run more than one program at the same time (multi-tasking), has colour, uses icons and a mouse, has three custom chips, includes one built-in large capacity disk drive and costs $1200 (without monitor) — it's even spawned a new magazine, Amigaworld.

On with the Show

Anybody who doubts that the Amiga has really changed the face of computing should have watched the "special performance" laid on at the New York launch.

Andy Warhol (inventor of 'pop-art' and 60s chic) was wheeled on with Blondie blonde Debbie Harry, to prove that you can do real arty things with the Amiga. He managed to produce an on-screen portrait of la Harry, saved to floppy disk for posterity — and copyright wrangles.

Seconds later, three top American musicians took to the stage with their instruments and the Amiga joined in with an improvised jam session.

For the cultural highbrows, Amiga displayed an animated, three-dimensional cinematic ballerina, dancing on the big screen — in front of which danced a real ballerina, matching each step.

Maybe that didn't impress the business contingent, so a copy of the IBM PC system disk was conjured up together with Lotus 1-2-3. Both disks loaded, a spreadsheet was called up, recalculated and changes saved back to disk. No magic, no hardware gizmos — all the IBM emulation was done in software.

The Soft Side

After the human Stars came the Star software. Cherry Lane Technologies weighed in with an Amiga music package to blow your socks off. We've all watched home synth owners setting the bossa nova, choosing a chord sequence and then improvising a melody on top. Well, the Amiga was doing the opposite.

Under the control of a program called *Harmony*, the Amiga was actually listening to the saxophone player, with a little analogue device called *Pitch Rider* plugged into the saxophone's neck. The Amiga wasn't just playing a background rhythm, it was 'following' the player, putting together slow chord sequences when the player scattered the notes and breaking into fill-in riffs when he paused.

A writer from Rolling Stone magazine left with his eyes glowing, "I know the technology exists but I had no idea it could be done with an off-the-shelf computer".

On the games front, SubLogic (they wrote the Microsoft Flight Simulator) had a jet aircraft simulator with engine noises recorded and digitised from the real thing. Not only was the engine roar stunningly real, the simulation itself was far in advance of anything yet produced on micros.

Not to be left out, Electronic Arts had the *Deluxe Video Construction Set*, a package that lets you design your own animated videos, taking advantage of the Amiga's video-in video-out facility.

EA President Trip Hawkins could hardly contain himself. Commenting on Amiga products EA is currently working on, he said, "Some of them are games like you've never seen before. Games on the Amiga will be 'real' arcade games, not inferior imitations of arcade originals." And EA is pulling out all the stops, reportedly already working on 15 Amiga titles.

Probably the biggest surprise of all was the revelation that *Amigados*, the machine's operating system, is actually a British product called Tripos. Bristol-based Metacomco licensed it and then ran into the Amiga team late last year.

According to Metacomco boss Tim King, "Apparently they'd spent over a year working with a software company in Arizona, trying to write a multi-tasking operating system from scratch — and it wasn't working."

Metacomco were told there was no time for them to join in the race, even though the whole project was now going to be held up by at least a year. "We said we'd do what we could anyway, and we had it up on the machine in three weeks." So Metacomco got the contract.

Wall Street Rag

No business software was on display but Tardis Software produced the specification for a "new generation" of integrated business package curiously called *Maximillion*.

According to Tardis boss, Mike Lehman, "The integration is made possible because of the multi-tasking capabilities of Amigados. We have a background task, *maxiNet*, which monitors which files are open and which applications are working on them.

"If you have two users running *maxiTerm*, the communications program, they can both be working on the same spreadsheet and the program ensures that changes made on one will be copied to the other. You just couldn't do this on a machine without multi-tasking."

Even if the jargon was difficult to grasp, nobody could fail to appreciate what multitasking can do for the business user.

But from Wall Street reporters there came a stony silence, and a few sceptical sniffs. Trouble is, they don't understand microtechnology, and they've been fooled before, fooled not only by past promises from Commodore but claims from the likes of Apple and IBM. Ain't nobody gonna make suckers out of them again, no sir.

"We're aware of the problem," says Commodore UK's Gail Wellington. "But to be honest, the reputation that Commodore has seems to be part of Jack Tramiel's relationship with dealers and the press." In other words, Commodore hopes buyers will only see the machine and forget Commodore's broken promises of old.

The big chains will take some time to believe all this. The Wall Street Journal has already reported that bigboys Computerland and Sears were offered and turned down an Amiga franchise.

Back in the UK

The sad news is that Amiga won't be available in the UK until January 1986, the main problem being its video facility. It can accept incoming pictures either from the air or videotape. Problem is, America uses a different colour coding system (NTSC) to that in the UK and Europe (PAL or SECAM).

To convert to PAL requires major re-engineering of the three custom chips. And this isn't expected to be foolproof until next year. Using the US price as a guideline, though, the Amiga should cost around £950 (without screen) in the UK.

Conclusions

Will the Amiga sell? Will it halt Commodore's flagging fortunes? Tough questions, but research has shown that Americans already spend an average of $1200 for a home computer. So the Amiga's right in there, offering amazing sound and graphics into the bargain.

For business users it's fast, cheap, has lots of memory, is technically sophisticated and even has IBM compatibility — an insult for a machine of this calibre. But will business software houses write specially for Amiga? No answers yet. Commodore hopes to sell 150,000 Amigas in the US by the end of the year. And already, 'industry analysts' are hosing down the hot enthusiasm, predicting that sales will be more like 60,000.

Amiga's problem is that it packs so much in, it overturns people's ideas about home and business computing. Conditioning and snobbery may conspire against it. Maybe one day, the business man or woman will plan company spending on Amiga at work and compose a rock video with it at home — and it might stop Junior flunking math. And then we'd have a real revolution. □

AMIGA SPECIFICATION

- Motorola 68000 processor, running at 8 MHz
- 192K ROM
- 256K RAM standard expandable to 8MB
- integral 800K 3.5ins Sony disk drive (option for three more plus hard disk)
- three custom chips:
  - Agnes — animation, graphics
  - Daphne — animation, sprites
  - Portia — peripheral scheduler
- Amigados multi-tasking operating system
- ports: serial, parallel, mouse, stereo, video in/out, TV, optional videodisk interface
- maximum 4096 screen colours
- bundled Basic language

AMIGA REVOLUTION



US Amiga — special launch report

by Larry F Harman

A bright morning in New York, the sun rises behind the Lincoln Center for the Performing Arts. Inside, one of the Great Events in the history of microcomputing is about to take place. On stage for the first time, the long-awaited Commodore Amiga performs . . .

AND ON THE EIGHTH D

SUMMER

Experience the thrill of top international competition in your own home! Summer Games II brings it all to you with eight challenging new events. You and up to seven other contestants can compete in your favourite individual event or go for it all in the grand competition. Some events, like cycling, rowing and fencing even challenge you with realistic head-to-head competition.

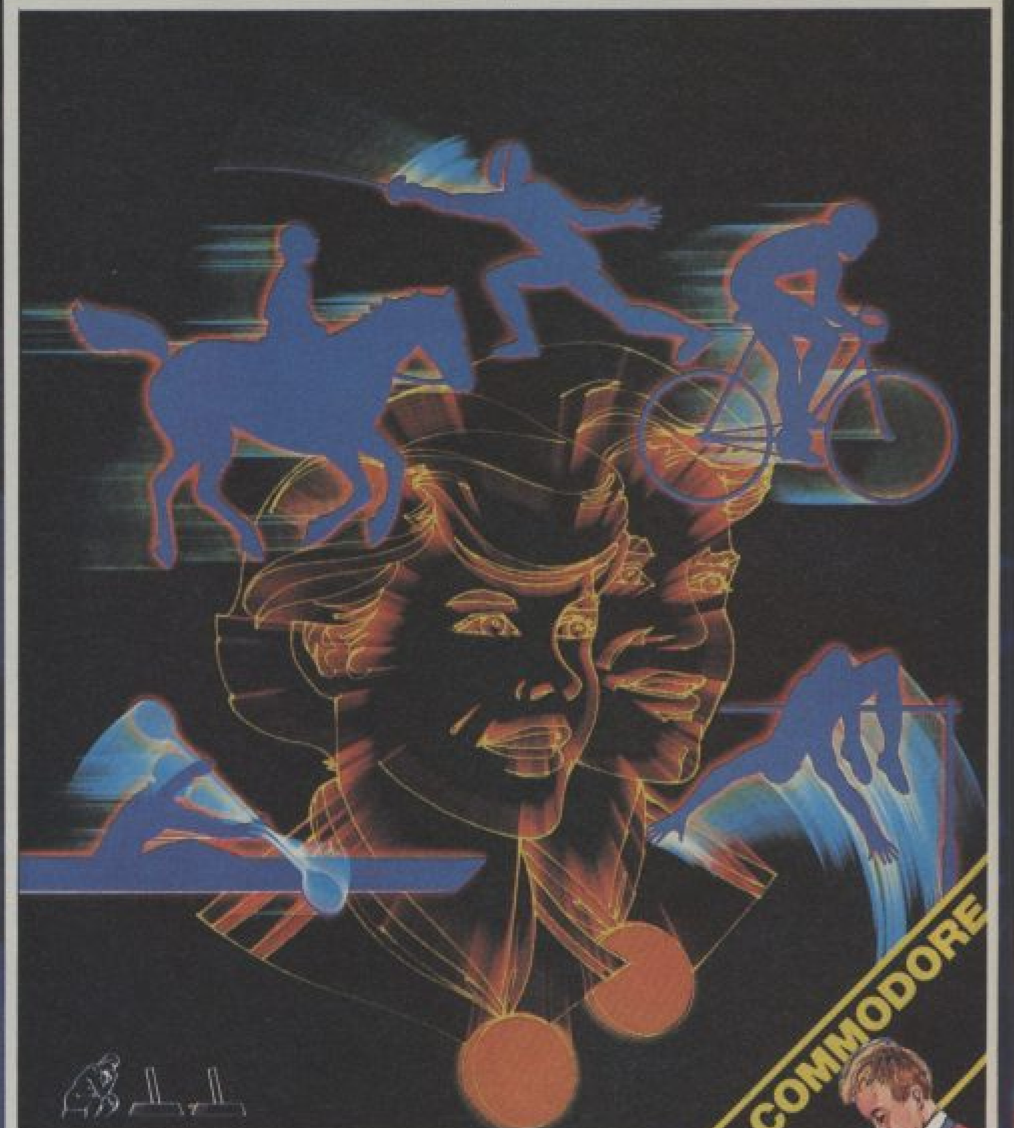
First, decide which of the 18 different countries you're going to represent. Then, in true Olympic fashion, you will need the proper strategy and mental toughness, not just speed and agility to excel in each of the eight events. That's why we included a feature that lets you practice each event until you're ready for the real competition.

Remember, it's not too early to get ready for 1988. With the right diet, proper training and lots of practice you just might make it. In the meantime, put on your sweatsuit, grab that joystick and let Summer Games II give you eight new ways to **Go For The Gold!**

- **Includes Cycling, Fencing, Kayaking, Triple Jump, Rowing, High Jump, Javelin and Equestrian Events**
- **Opening, Closing and Awards Ceremony With National Anthems**
- **Compete Against The Computer or Your Friends**
- **Individual and Head-To-Head Competition**
- **One to Eight Players**

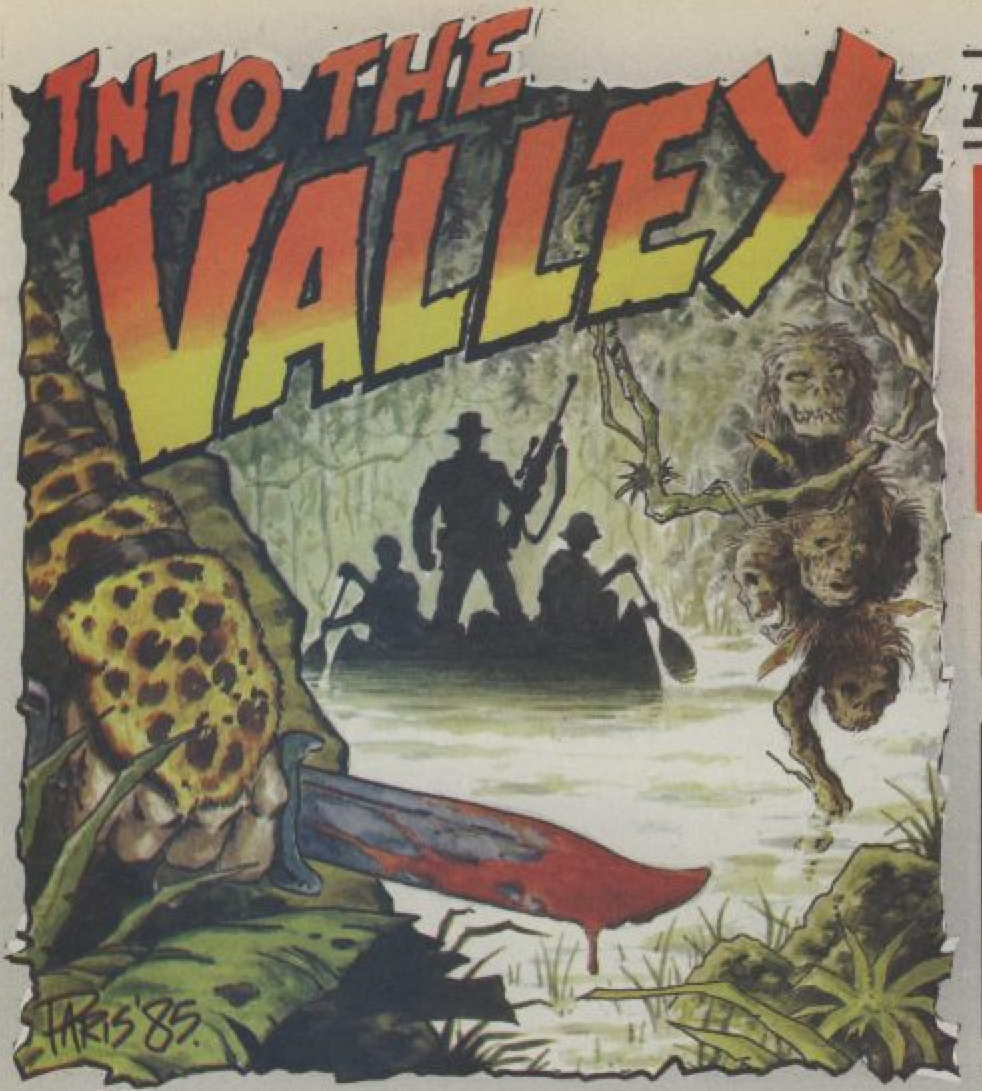
'SUMMER GAMES II DOESN'T LOOK SET TO BECOME A CLASSIC– IT IS A CLASSIC!'

–ZZAP 64






H DAY EPYX CREATED...
R GAMES II
'Summer Games II now takes the Gold as the greatest sports simulation ever created for the 64.'
–Commodore User
'Summer Games II is eight outstanding games rolled into one piece of software–100% value for money.'
–Computer Gamer
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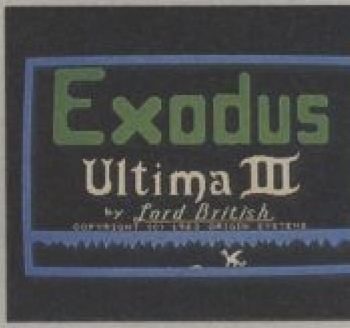


BY JOHN RANSLEY

Funny life, being a reviewer. Some months you can't find a single nice word to say, while at other times it's difficult to control your excitement and enthusiasm.

Happily, this month it's the latter case, with a whole load of praiseworthy new titles. We've a head-to-head between *Red Moon* and *Mordon's Quest*, not forgetting *Beatle Quest* and *Exodus: Ultima III*. Latest news and our very own Chart completes this month's Valley.

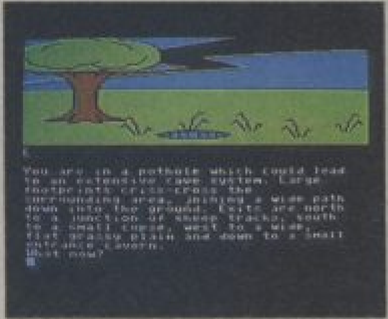
Ultimate from Gold



Exodus: Ultima III

For something approaching the ultimate in role-playing/graphic/animated adventures, you'd be hard-pressed to beat (if you can afford it) the debut title from All American Adventures — an offshoot of the US Gold operation that has so successfully swamped these shores with Stateside products that it accounts for a quarter of British software sales.

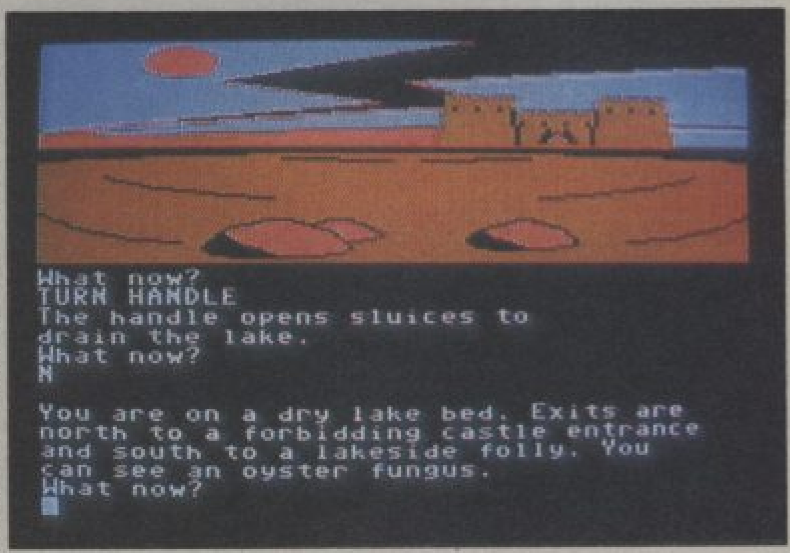
Will AAA do the same? Certainly it could on quality grounds, but how many people do you know who are prepared to stump up £19.95 for a single-disk adventure? Supposing that



Mooning about

Level 9 made its name with first-rate text adventures but eventually showed that it could produce graphic titles along with the best of them when it devised *Erik the Viking* (for Mosaic), *Return to Eden* and *Emerald Isle*. **Red Moon** not only maintains the standard set but surpasses it by introducing a new element of control which, although owing something to the rules of the earliest role-playing board games, adds greatly to the usual conventions of an adventure by offering scope for additional skill and strategy.

In the kingdom of Baskalos, it seems, marvellous magicians and talking animals were once the order of the day — until the moon crystal was stolen and the quality of life sunk lower than a wet Sunday afternoon in Milton Keynes. Needless to say, the crystal must be retrieved, a task that will take you to more than 200 locations in which you will encounter the mythical monsters which guard nine fabulous treasures and other objects you need to collect.

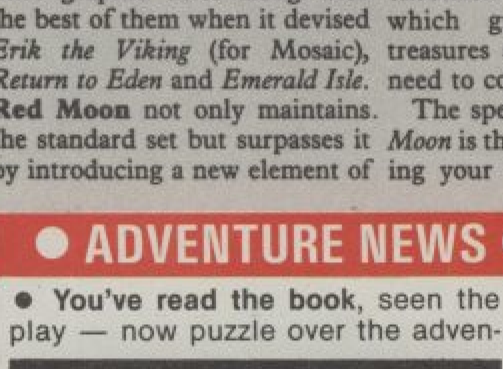


The special feature about *Red Moon* is that in addition to applying your skill to exploring the environment and making the most of the game's extensive vocabulary, you can summon up more than a dozen different spells and apply each of them to specific objects or characters.

You can also test whether other items have magical powers of which you need to beware, and call your own into use against enemies. The full-colour illustrations of the locations you visit are pleasingly and quickly drawn and, at last, Level 9 seem

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• **You've read the book**, seen the play — now puzzle over the adventure game. *The Secret Diary of Adrian Mole, aged 13¼* (shouldn't that be 13.25?), Sue Townsend's bestselling book about a precocious boy and his spots, is to be launched this month. It's programmed by Pete Austin of Level 9 and published by Mosaic — the same combination that brought you Erik the Viking. Mosaic promises an extension of the world of Adrian Mole — with you as the protagonist. The graphics will be based on Caroline Holden's who drew the originals for the book. The cassette costs £9.95, but for £14.95 you can have a complete Adrian Mole kit comprising of cassette *and* a colour illustrated diary for 1986. We've got it pencilled in for review next month.



• **Lord of the Rings**, the long-awaited sequel to Melbourne House's *The Hobbit*, is due for release in October. The software house has had its top programmers working on it for most of the year, including (it is rumoured) graphics wiz Russell Cont, who has moved

there are enough buyers to make marketing **Exodus: Ultima III** worthwhile, they are unlikely to be disappointed with this amazingly complex, multi-feature adventure, which probably takes this particular type of game just as far as it can ever go.

You'll need a month off work just to work through the Book of Play, which is packed with information and illustrations to help you make your first tentative steps through this truly epic quest. So epic in fact that your first wordly task is to format a scenario disk — and that alone takes several minutes.

Then before you set out, you can choose to walk alone or to travel with up to three other characters. After that, it's merely a question of choosing from 16 different weapons, 32 magic spells, 16 classes and races of character, and numerous other options in countless situations of exploration, movement and combat. There are even astrological influences to take into account.

I can't pretend that this summary more than scratches the surface of Exodus; it is a profoundly sophisticated game — and even if the price tag does tend to make one flinch, in fairness it should be viewed against the hundreds of hours of play value it's likely to provide. It will be interesting to see whether All American Adventures can follow this impressive flagship with more modest, and affordable, craft of comparable quality.

Classic quest

In a way, the release of **Mordon's Quest** from Melbourne House and Level 9's **Red Moon** rekindles another old rivalry. The MH title is the creation of John Jones-Steele, whose excellent interpretation of the Crowther and Woods original represents the only serious alternative to Level 9's own implementation.



Mordon's Quest

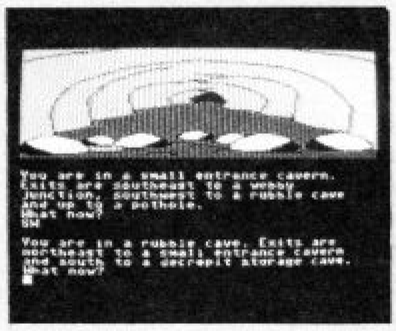
Indeed, *Mordon's Quest* is a kind of sequel to *Classic Adventure*, but it is much, much better in most respects. With the help of co-programmers Peter Moreland and Peter Donne, Jones-Steele has managed to cram in no fewer than 150 locations — always fully and frequently exhaustively described — and a player vocabulary of some 400 words.

It all begins conventionally enough, with the task of finding a safe escape from the house that is your starting point — but you soon find yourself facing no small number of perils and problems on the way to discovering an ancient ruined city where there are old coins, pieces of machinery and other relics to be collected before you reach the next stage. This is a staggering journey through thousands of years which ends with your arrival in a futuristic world and a first meeting with Mordon himself, who pleads for your help in restoring a mythical immortality machine — without which the universe will perish.

The rest of the time's your own. But then, you never really

to have beaten the problem of the raster dazzle along the bottom of the hi-res graphics window which plagued earlier 64 titles.

Level 9 never seems to produce a bad product and indeed the ability of Pete Austin and Co to produce three superb graphic adventures this year alone is itself verging on sorcery. Also magical is the way they keep the price down to £6.95 — and the new full-colour cassette label is a lovely gimmick.



● CHARTS ●

	1	(4)	**Subsunk** — C64/128 (Firebird, TA, £2.99)
	2	(5)	**Jewels of Babylon** — C64/128 (Interceptor, GrA, £9.95/£11.95 disk)
	3	(1)	**Gremlins** — C64/128 (Adventure International, GrA, £9.95)
NEW	4	(–)	**Sorcerer of Claymorgue Castle** — C16/Plus4 (Adventure International, TA, £7.95)
	5	(8)	**Gremlins** — C16/Plus 4 (Adventure International, TA, £7.95
	6	(9)	**The Helm** — C64/128 (Firebird, TA, £2.99)
NEW	7	(–)	**Circus** — C16/Plus 4 (Adventure International, TA, £7.95)
NEW	8	(–)	**Castle Blackstar** — C64/128 (CDS, TA, £6.95)
	9	(3)	**Emerald Isle** — C64/128 (Level 9, GrA, £6.95)
NEW	10	(9)	**Pirate Adventure** — C16 (Commodore, TA, £11.99)

British Telecom's Firebird software division are obviously making the right connection to budget-conscious adventurers with the first cheapie ever to hit the No.1 spot in the Valley's chart. In *Subsunk*, authors Peter Torrance and Colin Liddle ingeniously extended the potential of *The Quill* by incorporating graphics constructed from the 64's standard character set. Meanwhile, text purist Simon Jay gives Firebird its second chart entry with the highly humorous *Helm*.

Brian Howarth puts the rest of us armchair programmers to shame by snatching three of this month's chart places with his brace of Gremlins and C16 version of one of his best Mysterious Adventures. The new and much acclaimed 64 implementation of *Castle Blackstar* from CDS makes an early break, and Commodore provides this month's anchor title with their instant-play C16 cartridge version of a Scott Adams classic.

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over from the Spectrum. It will consist of three separate parts, costing around £10 each, maybe packaged with the book. Part one is entitled *Fellowship of the Rings* and introduces the major characters as the step out on their epic journey to win back the rings from the hands of evil. The other two parts, *The Two Towers* and *Return of the King*, are expected to follow at six monthly intervals.

● **Adventure International** are offering mail order customers a money-saving two-for-one deal on most of their Scott Adams, Questprobe and Mysterious Adventures titles for Commodore micros (sorry, not *Gremlins*!). For example, you can have *The Hulk* and *Spiderman* with graphics for the 64/128 at £9.95 the pair, including postage, or a couple of Brian Howarth titles for the 64 or 16 at just £7.95 — at least, while sale stocks last. Details from AI at 85 New Summer Street, Birmingham B19 3TE (021-359 0801).

● **Big-name** British and American software houses have been dangling tantalising tidbits of information about new adventure titles they'll be launching at the PCW Show which runs at Olympia from 4th to 8th September — the traditional launching pad for new titles which their publishers hope will be hitting the charts over the next four months. Read the Valley's first report on adventures new at the show in our October issue.

● **Congratulations** to M P Green of Gainsborough, Lincolnshire, on his

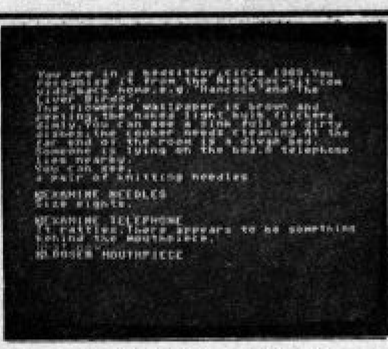
get into a Melbourne House adventure expecting an easy ride, do you? The parser is happy to accept verb/noun pairs, which makes life easier for the less experienced player, but it will respond also to more complex commands such as GIVE THE POTTERY TO MORDON. Abbreviations too are accepted, and play options include the invaluable facility (which some adventures even now omit) to save and reload a game at any point.

It almost goes without saying that the game is packed with fiendish but not illogical puzzles and challenges to your deductive powers and ingenuity — but surely the real strength of *Mordon's Quest* is that it improves even on this author's earlier title in the excellence of its intelligent and stimulating text screens. John Jones-Steele isn't just clever at devising novel scenarios and fresh challenges — he's also a master of the convincing scene-setting prose style that complements rather than muffles the player's own imagination.

I dare say that if *Mordon's Quest* had originated in the US and was banged up in a flash cardboard box or video-style case with loads of superficial documentation its inherent qualities would still shine through, but it would cost an arm and a leg. As it is, Melbourne House have priced it at £6.95, and that's outstanding value. If you've been strictly a graphics player up to now, I urge you to take up *Mordon's Quest* and discover the delights of a well-written text adventure.

Magical mystery tour

Those privileged enough to enter the inner sanctum of the Valley find it a calming and



almost spiritually gratifying experience to gaze upon the youthful countenance of its undisputed monarch. Others ask to see the picture in the attic. This is by way of establishing my qualifications to review **Beatle Quest** from Number 9 Software at £9.95, which must be assured of a long and steady sales life thanks to children of the Sixties like myself who fondly remember the thrill of buying their first kaftan and packet of joss sticks.

Author Garry Marsh has come up with a good idea and made the nostalgic most of it. The plot has you taking the part of a literally spaced out archivist who's researching the music of the Four Kings of Emi (groan). You'll find yourself making tracks to some 150 locations where around 60 objects are to be found and used or returned to your bedsit.

The real fun of it all, of course, is that the whole game revolves around the lyrics of Beatle songs, and it's in these that you'll find many of the clues you need. Because of the way things were in those days, there's naturally a chauvinistically-healthy helping of sexism, such as the reference to the girl of 17 (you know what I mean) who looks way beyond compare.

The Fab Four flavouring wittily extends to every aspect of play so that, for example, an illegal input prompts the response YOU CAN'T DO THAT; and a call for help produces not the address for a hints sheet but the reply YOU'LL GET BY WITH A LITTLE HELP FROM YOUR FRIENDS. But not enough, evidently, for in my first attempt I didn't manage to explore much beyond the initial location before Maxwell's Silver Hammer came down upon my head. I'd notched up a totally unamazing score of 30 out of 1000, and was asked DO YOU WANT A RETURN TRIP?

Beatle Quest, like *The Helm*, shows just how good an adventure can be produced using *The Quill*. A pity perhaps that it couldn't have been a couple of pounds cheaper, but the price probably reflects the royalties payable for the use of the lyrics, and the tape does come in a decent vinyl binder bearing the unmistakable artwork of Alan Aldridge. *Beatle Quest* is definitely something of a collector's item, even if you were still in your pram when the Juke Box Jury were saying they liked the backing. It's fab gear alright.

Four for Plus/4

At long last a publisher has done the right thing by adventure-seeking Plus/4 owners with the release by Duckworth of the **Plus/4 Adventure Pack**, containing four full-scale quests on disk — including a very respectable version of *Colossal Cave* — by Pete Gerrard and a copy of *The Adventurers' Notebook*, which provides a handy introduction to the conventions of computer adventuring and pages of blank maps. The whole caboodle comes in a decent vinyl case at £14.95. A copy of the pack together with Gerrard's book on adventure programming should provide more than a springboard for the creative player who likes the idea of royalties.

The bumper crop of highly reviewable titles this month has left me short of time to launch the promised crib column; a thousand pardons — but I promise that it will make its debut next month. □

• COMPETITION •

Given that spells and sorcery play a fair part in a couple of this month's reviews — not least that of *Red Moon* — why not try to conjure up a free copy of Level 9's latest and greatest in this month's competition? We've five copies to give away.

All you have to do is decide whether the correct name for a medieval magician supposed to have the power of turning base metals into gold was (a) an atheist, (b) an alchemist, or (c) an altruist. Give your answer on the form below and add the names of your three favourite adventures. You can send in an entry on a postcard if you prefer.

The answer is:..

Name..

Address..

....

My three favourite adventures are:

1..

2..

3..

Send your entry to RED MOON COMPETITION, Commodore User, 30-32 Farringdon Lane, London EC1R 3AU.

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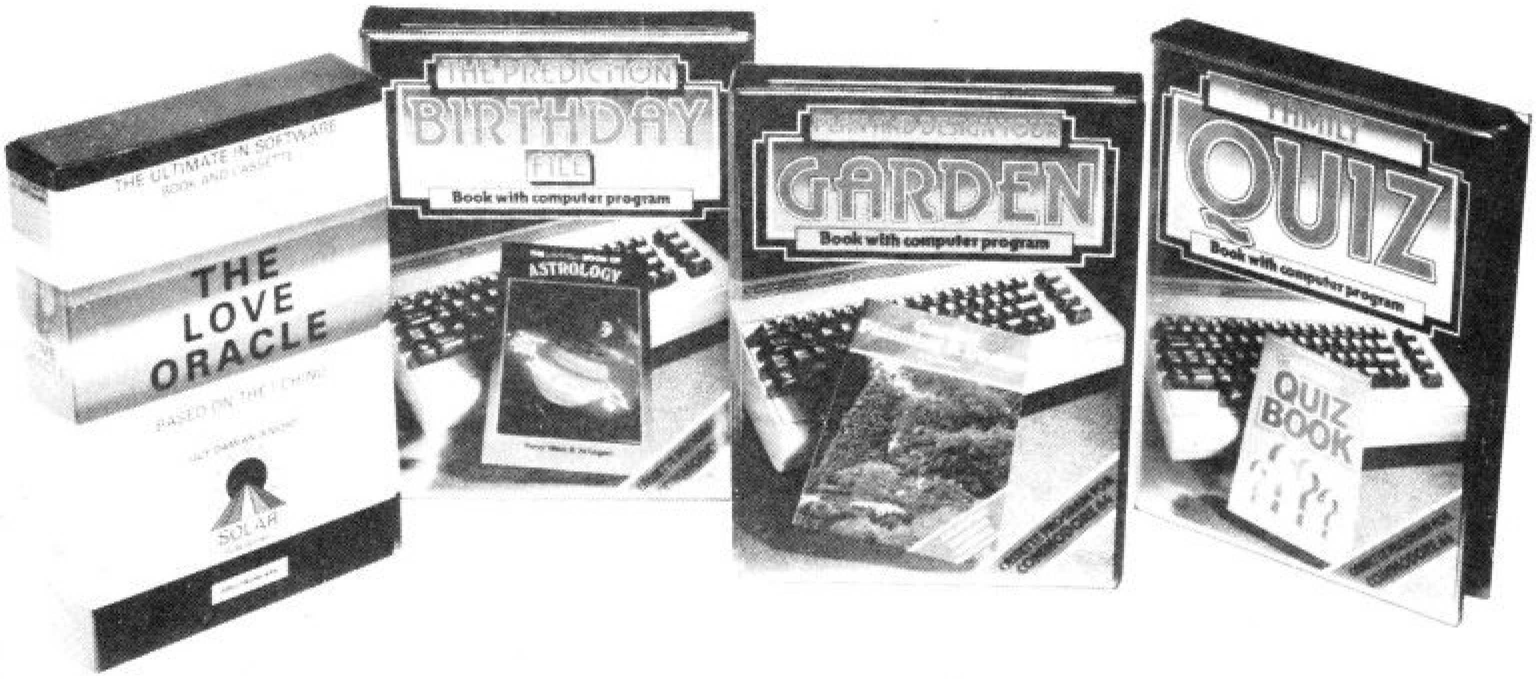
lucky entry in our Adventure Soundtrack quiz (the mute exception was *The Lords of Midnight*); and to the five readers who win Print 'n' Plotter Adventure Planners for knowing that the proper name for a mapmaker is a **cartographer**. They were Thomas A Watson of Winsford, Cheshire; Brian Coughlan in Mallow, County Cork; Mrs Valerie Bishai of Bury St Edmunds; Adam Lees in Wightwick, Wolverhampton; Frank Ryder of Martlesham, Suffolk; and C Rumney with the 13th Signals Regiment stationed with BFPO 42.

• **Not content** with bulldozing into our chart with its first two adventure titles, British Telecom is going the whole hog by introducing an enhanced version of Multi-User Dungeons which allows input from up to 100 players simultaneously. Sign on charge is £20 — and of course you'll need a modem.

• **Dangermouse** had better take early retirement to the Cheddar Gorge now that a new adventure based on horror author James Herbert's bestseller is on the rampage. Coded by Five Ways Software for Hutchinson, **Rats** resembles the same team's treatment of *The Fourth Protocol* with its mix of icon-driven options, arcade interval and graphic adventure section. From your control room beneath the streets of London, your task is to deploy the army, fire brigade and other forces against the rodent foe. Due out this month for the 64/128, *Rats* is priced at £7.95. Watch for Valley's full review next month.

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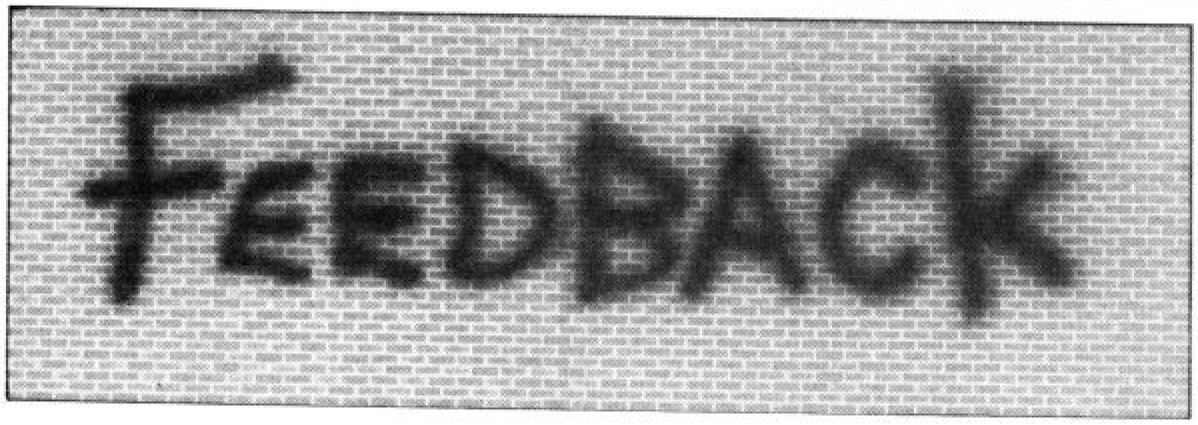
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Pros and Cons

Dear Commodore User,
I read Jeff Minter's comments about reviewers and Commodore User in his paper and I agree with you. How can you recommend a game if you're not allowed an opinion about it? A shopping list of pros and cons for graphics and sound etc. would be very boring to read. You generally mention all of these anyway. I bought some of the games you said were good but that didn't chart, like Tapper and I wasn't disappointed.

P.S. I also agreed with Mike Pattenden when he said Minter's earlier stuff was much better. I've got Mutant Camels and it's still great but a friend of mine bought Psychedelia and it looked really boring. Anyway keep up the good work, the mag's great!
Gary Hartnell
Hull
N. Humberside.

Sounding off

Dear Commodore User,
I'm just writing to say that I think your reviewers spend too long sounding off their own opinions and trying to be funny instead of telling people what the games are like. Your review of Amazon Warrior in the July issue was just one example. Keep to the point!
Dave Sibley
Huyton
Liverpool.

Well, we agree with the first letter obviously, but our track record on Screen Stars charting speaks for itself. Anyone else out there with us on this one (please!)?

Competition Blues

Dear Commodore User,
I know it's not your fault that I live so far away from England. But it is very upsetting when I keep receiving copies of your magazine too late to enter the great competitions. Missing out on the Screen Scene competition in June was bad enough. Now I see you're offering the Commodore 128 as first prize in the July issue. This is too much for me.
Ahmed El Yassidi
Jeddah
Saudi Arabia.

We sympathise with your plight, Ahmed. Actually, your chances of winning the 128 were very slight. We got a gigantic amount of entries. Looks as though readers really want the 128. We'd like to hear what else (within reason) readers would like to win as a prize. Why not drop us a line?

Wrong Longbow

Dear Commodore User,
I have noticed a serious error on the July cover of Commodore User. Robin of Sherwood is holding a recurved bow when, as every Englishman knows, he actually used an English longbow. This weapon does not have the two curves by the handle. As this was our first famous weapon . . . naughty, naughty, naughty. Best wishes.
Miles Cookman
Eaton Socon
Cambs.

You're probably right about this, so we've decided to take the crayons away from our designer for a while.

Aussie swaps

Dear Commodore User,
The price of Commodore User in London is 95p which I think is reasonable for such a great mag. But over here in the middle of the Outback (three hours from anywhere), I buy your mag for $2.50. That's about £1.25 and, again, that's very good value.

Now comes the crunch. If I want a subscription to your great mag, the price jumps up to about £3 per copy. I think the Australian dollar hitting rock bottom (I hope) has a lot to do with it. But I'll still keep buying Commodore User. Maybe someone in England could help me? How about swapping your English mags for our Australian ones?
M J Luck
16 Yeats Crescent
Dysart 4745
Queensland
Australia.

Too true

Dear Commodore User,
I've just got back from holiday and picked up the latest issue of Commodore User. You guessed it, I went to Spain, so I was greatly interested in your piece about the new Terrormolinos game.

From the advance information you give, it looks like being pretty close to the real thing, especially from my experience. We spent nearly the whole holiday fighting a constant war against grotty food and keeping away from lunatic, drunken hooligans, not to mention the police.

I'd like to play Terrormolinos, then again I might not. It would remind me too much of my lousy holiday.
Richard Braithwaite
Sheffield
Yorkshire.

Failure to chart

Dear Commodore User,
I am the owner of a Commodore 16. I think the support you are giving the C16 is brilliant. But I have noticed that you have a Commodore 64 chart and a general software chart, but where's our C16 chart?

There aren't any computer magazines that have C16 charts. It just isn't fair as software charts give me an idea how games are selling and which are particularly good.

Please, please, please give the C16 a software chart.
Michael Medlicott
Stirchley
Birmingham 30.

Compiling a C16 chart isn't that easy — there aren't that many games being released at the moment. We'll give it a go if we can find a way.

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COMMODORE 16/Plus 4
- Harbour Attack (cass.) ☐
- Space Sweep (cass.) ☐

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COMMODORE 16/Plus 4
- Jack Attack (cartridge) ☐

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UP UP AND AWAY

... WITH SUPERMAN

It all started on the Planet Krypton. One day Superman would soar to Earth to fight for truth, justice and the rights to a new computer game. Arguably the hottest licensing deal in the history of computer gaming, the megatask of turning the Man of Steel into a heap of pixels went to New York-based First Star Software, with Beyond Software snapping up the UK rights. How did it all start? We take you over to the offices of the Daily Planet in downtown Metropolis to find out . . .

It was a hot, sweaty day at the Daily Planet. News was pretty thin on the ground and Clark Kent knew that the Editor would be screaming for copy any minute.

Sure enough the bull-like form of Perry White appeared in the newsroom, sending a dozen reporters scurrying to their typewriters.

"Where do you think you're going Kent? I've got an assignment for you", growled the Chief.

"I want you to go and see First Star Software. They're a computer games company just off Fifth Avenue. Their next big game is gonna be based on Superman. It's being done by some Mexican guy called Fernando Herera."

"Isn't he the guy who won the First Star award for the *My First Alphabet* game?'' interrupted Clark nervously.

"Yeah, he's the one. According to this dame called Diana Lumis who's the outfit's hype merchant, he's got a dumper truck full of awards. Says here . . ." Perry shuffles a wad of papers in his hand and starts to read. ". . . The company takes its name from the First Star award presented to Fernando Herera for *My First Alphabet* blah blah blah . . . other awards won for *Spy Vs Spy* and *Astro Chase*."

Perry had read enough. Spotting the city editor trying to slope off to the bar, he made towards him, slapped the bundle of papers down on Clark's desk and left, saying "The angle is the game itself. If the Man of Steel is getting involved in computer games then Planet readers want to know about it."

"Yessir" said Clark, glad to be getting out of the gunfire for a while.

"Kent!" bawled Perry, before Clark could make for the door. "Sir?" he said. "There's some hack reporter from Commodore User also chasing this story, just make sure we get it before that limey."

"You bet Mr Perry Sir," Clark shouted back. At least this story was going to be a cinch. Who could possibly know more about Superman than Clark Kent?

First at Fifth

The Man of Steel thought of the lovely Lois Lane as the big yellow taxi swept through the midday Metropolis traffic. "She's going to be so impressed with this piece on computer games and me," he thought, imagining Lois reading it entranced on the subway.

"You're here bud, First Star Software," grunted the taxi driver, shaking Clark out of his wanderings.

"Clark Kent from the Daily Planet," hesitated the bungling reporter offering his hand to the programmer.

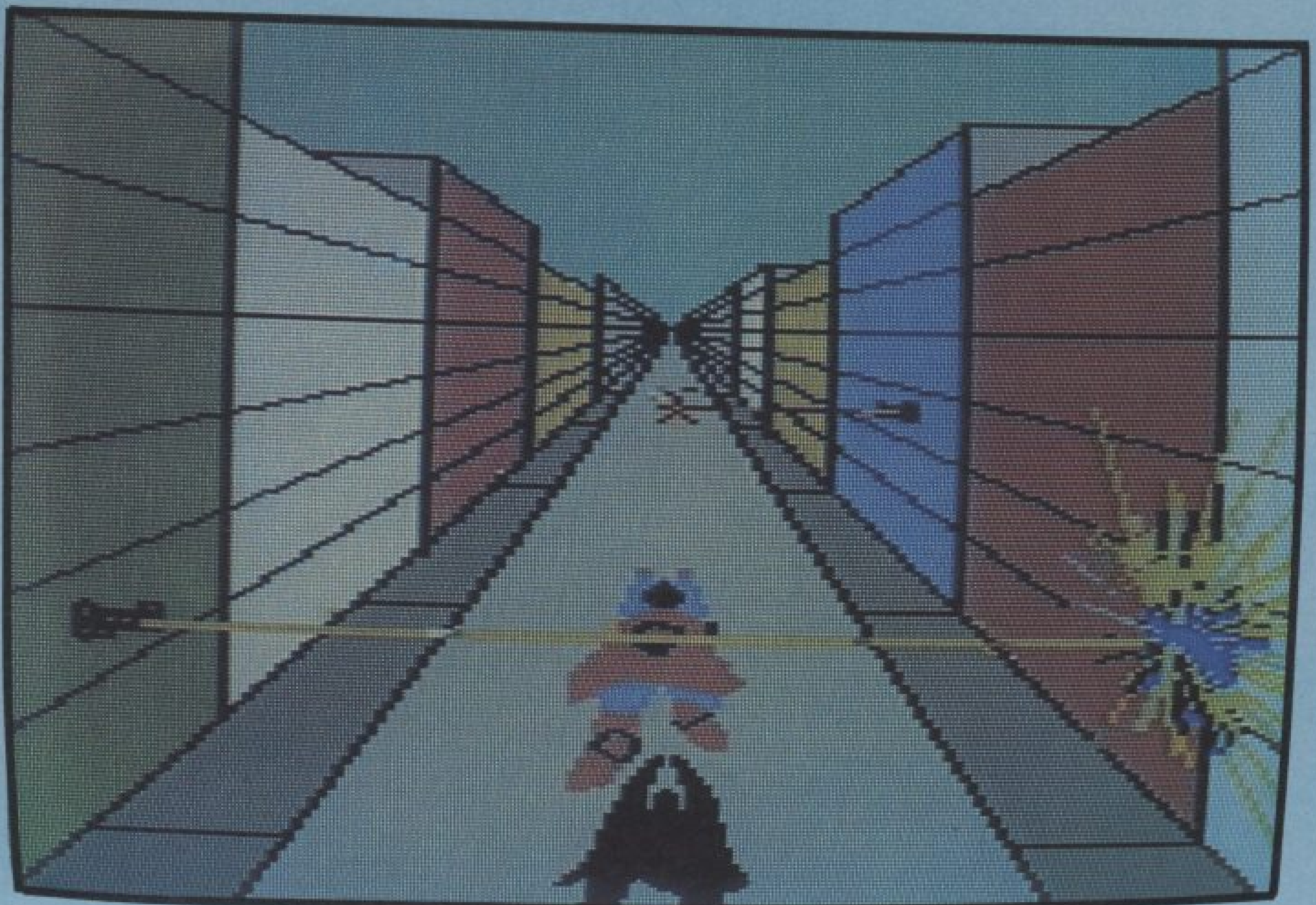
"Fernando Herera, glad to meet you."

"Tell me Mr Herera . . ."

"Call me Fernando" interrupted the programmer.

"Thank you," said Clark, starting to write in his pad. "Why did you choose Superman as a subject for your next computer game?"

"I've been a fan of Superman for as long as I can remember. He means a lot to me and to lots of other people as well. There is no



An exclusive report with Clark Kent

better possible licence you could get to produce a computer game on," said Herera, in his gentle Mexican accent.

"How did you get the licence?" asked Clark, blushing inwardly at the praise being lavished on his other, secret, identity.

"We had to get permission from Superman's official publications company, DC Comics, and I can tell you that they are pretty fussy about who they do things with."

"So why First Star?" asked Clark, warming to the subject.

"First Star is owned by Warner Communications. They also own DC Comics. So it was a deal between companies in the same group. We still had to convince them that we would do a good job, though."

"How did you manage that?" asked Clark.

"We already had one very successful translation to show them of the Spy characters from Mad Magazine. That helped our cause tremendously. They could see what we were capable of," said Herera.

The Plot

"What about the game itself?" asked Clark, remembering Perry's instructions to make this the angle for the feature.

"It pits Superman against one of his worst enemies, Darkseid, who is planning to take over the world."

"So Superman has to save the world?" enthused Clark, thinking that he could offer a few ideas for that bit of the game himself.

"Yes" said Herera, "but there's a lot more to it than that. Darkseid is using his deadly Omega ray to capture the citizens of Metropolis. One of them has the Anti-Life Formula which, if Darkseid can get hold of it, will enable him to put an end to the human race."

"Where does the action take place?" enquired Clark.

"Right here in Metropolis. There are three main play scenes. The first in space, then on the streets of the city, and finally below ground in the sewers and subways," said Herera enthusiastically, enjoying talking about his game.

Clark Kent was going to make the most of this enthusiasm to get down as many hard facts as possible. "Game play options?" he said, hoping not to interrupt Herera's flow of good quotes.

"You can play either Superman or Darkseid . . . as a two player game, or as either character against the computer. If you choose the Superman role you will use Superman's heat vision as your main weapon against Darkseid."

"But will you believe a man can fly after playing this computer game?" said Clark, with a smile.

"There are some very impressive 3D graphics in the intermediate screens between the play levels. Graphics are our speciality here at First Star . . . and no-one is going to be disappointed with our representation of Superman," he said confidently.

"Including the people at DC?"

"Yes them too. They have been involved at every stage of the game's development. We had to stick closely to all the ideas behind the Superman comics and the idea of 'Truth, Justice, and the American Way' — the Superman philosophy," said Herera assuming an almost religious tone of voice.

"What is this exactly?" asked Clark, amused at people taking his other personality so seriously.

"It's a moral strength. Getting away from the idea that might is right. There is in Superman tremendous strength but he does not wield it violently. No-one is ever killed. The villains are apprehended and placed in the hands of the law, or warned not to do it again. In other words we had to be consistent with all of the ideals of the Man of Steel. These ideals are sacred to the people at DC and to millions of Superman fans. We had to respect that," said Herera reverently.

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"Heavy stuff," thought Clark. "This is getting embarrassing, I'd better move him on before I blush all shades of red."

The Programmer

"What can you tell Planet readers about Fernando Herera himself?" Clark said quickly, whilst the programmer paused for breath.

"You think they want to know about me?"

"I do."

"I am an architect by trade. I got into computer programming as a hobby. I wrote my first program to help my son overcome his problems with his sight. Once I'd done that I was hooked."

"What do you like about writing computer games?" said Clark.

"The creativity of it. I've always worked in creative mediums. Firstly with architecture and I have also done some sculpture."

"Excellent background material," thought Clark, scribbling quickly.

"Can you tell me about the scale of the Superman project?" asked Clark, content with the personal details of Herera.

"As far as we know it is the first worldwide games project ever. The game is being developed simultaneously in England, America and Japan."

"Who will do the English version?" asked Clark, thinking of the "limey" that Perry had warned him about.

"Beyond Software are writing a Spectrum and Amstrad version from the original game designed by us. The 64 version is being developed here," said Herera.

"Which machine will have the best version?" asked Clark, thinking that it was about time he got a computer for himself.

"The Amiga because it is by far the best machine. I just fell in love with that computer. People are not going to believe the things that it can do."

Clark was now satisfied that he had enough to keep Perry happy and, combined with his own 'inside' information about the Man of Steel, could write a feature so good that it would impress the hell out of one Miss Lois Lane.

"Mr Herera, thank you for your time sir," he said, again offering his hand, timidly.

"My pleasure," said Fernando.

They shook hands and Clark made for the lift.

Postscript

8, 9, 10, "Hurry up" thought Clark, staring intently at the numbers lighting up, one after the other, as the lift crept tortuously slowly towards the Planet's newsroom on the 14th floor.

With his first glimpse of the office as the doors opened, Clark caught sight of the slim figure of Lois Lane disappearing into the newsroom.

"Oh Clark, Clark, Perry is screaming for your head on a plate!" she said, before Clark had time to tell her about his great scoop. "He's got hold of some magazine from England, Commodore User I think it was called. They've got the story about Superman and the computer game already."

"Suffering swordfish," said Clark, borrowing a phrase favoured by his best friend Bruce Wayne.

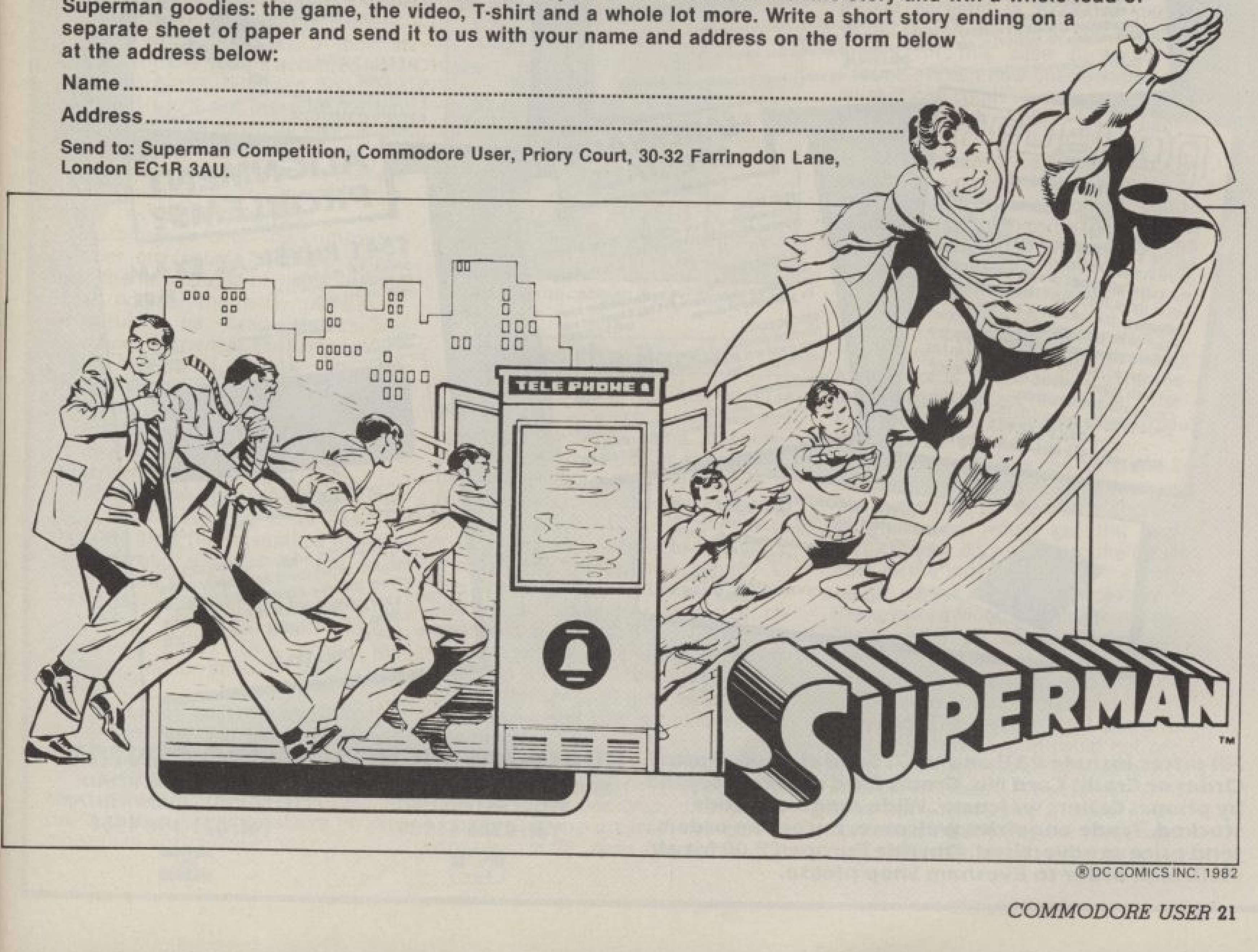
Peering anxiously through the window in Perry's office, Kent watches his hardnose editor tear a certain magazine to pieces in a mad rage. "I'm in for it now," he sighs. But then a bright idea strikes him. Dropping his case, he rushes headlong down the stairs and out into the Metropolis streets, in a frenzied search for a telephone box . . .

Why is Clark Kent rushing for a phonebox? Does he have a dime? What's his bright idea and how will he save his neck from the enraged Perry? Here's your chance to finish off the story and win a whole load of Superman goodies: the game, the video, T-shirt and a whole lot more. Write a short story ending on a separate sheet of paper and send it to us with your name and address on the form below at the address below:

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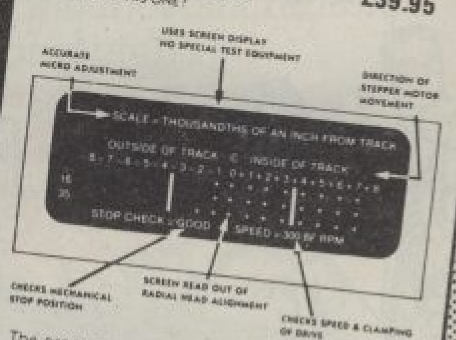
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INSIDE INFOCOM

America's top adventure games house

Real adventure-solving experts measure their ability by the number of Infocom games they've solved. These games are not for the uninitiated. And they are more than just tough. They have a special flavour that is all their own. Eugene Lacey went to Boston, Massachusetts, to meet the aristocrats of the American games business.

When you think of some of the brilliant arcade games that have crossed the Atlantic — titles like *Impossible Mission* and *Summer Games II* — you would think I was telling you lies if I said that the main chart toppers in the U.S. are text-only adventure games.

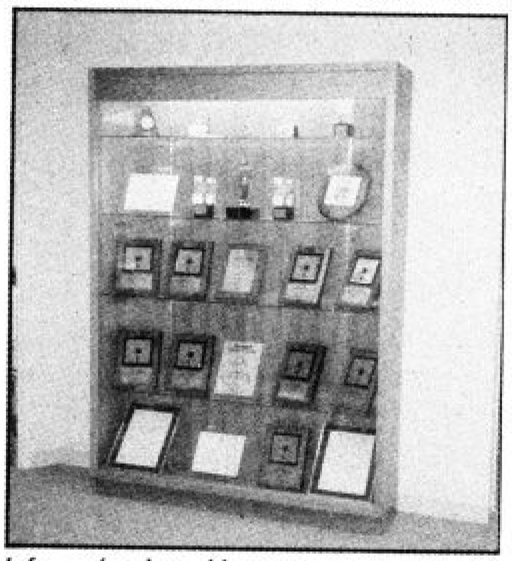
Well it's no lie. Take a look at America's most widely accepted software chart, the Billboard Top Fifty, and what you'll see there at the top, more often than anything else, is the Infocom range. It's not just that Americans prefer adventures that are really challenging, but they seem to prefer the text-only variety.

Infocom have been the undisputed number one source of these games over the last couple of years, leaving Scott Adams, the early pioneer of adventures, for dead. Games like *Deadline, Enchanter*, the famous *Zork* trilogy and, more recently, the *Hitch Hiker's Guide to the Galaxy* have all sold tens of thousands of copies. *Hitch Hikers Guide* alone has sold over a hundred thousand units since its launch in February.

Infocom games are not cheap either, about £30 each, so it is easy to calculate that the adventure experts have earned a small fortune from their software.

The phrase 'adventure game' is not one that fits into the Infocom vocabulary easily. They prefer the grander description, "interactive fiction".

Of course all adventure writers like to use the hype that they are actually turning you into the author of the action, but the advanced techniques used in Infocom games enable them to justify a term like 'interactive fiction' more than anyone else.



Infocom's prize cabinet: more trophies than Anfield.

Pass the Parser

The engine room of this interaction is the 'parser' — which is refined and adapted to each new game. All adventure games have a parser of sorts — a device that interprets the English in the command and makes a response accordingly.

Most parsers work by scanning through the computer's memory to see if any of the words typed in are key words. If they are, the correct response is triggered. The trouble with this is that it gives the player the impression that the computer understands the sense of the English being entered — and this is obviously not the case.

For example, the adventure could begin in a shop. The description of the location describes you, the protagonist, as being dressed in a pair of trousers with deep pockets. The seasoned adventurer would check these pockets to see how much money is in them so that he might buy something useful.

If you typed in "count all the money in my pockets" a key-word parser would search the line to find a word it knows. In this case it would be "count". It can now check this to see what it can count — and comes back with the reply "£5". That makes sense.

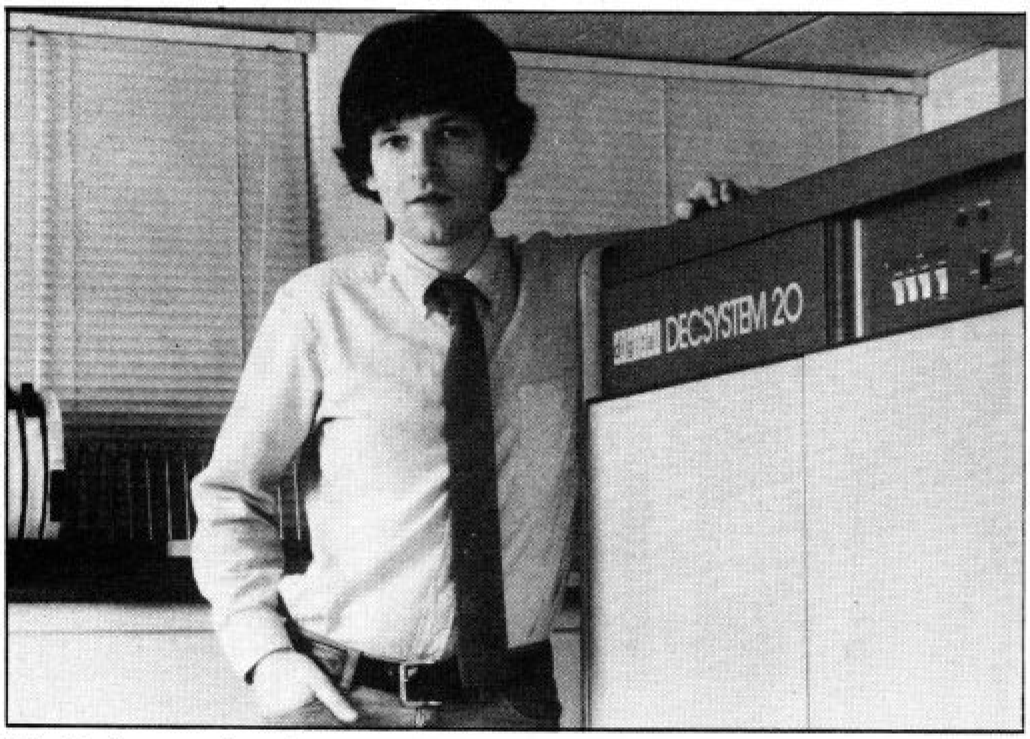
The problems arise when you try to count anything else in the shop — say the number of other customers, cuddly toys, or aardvarks. To these questions, and any other at this location using the key word "count" the computer will give the same inane reply — "£5".

The Infocom parser works in a different way. Instead of just scanning for key words, it also analyses the sentence structure, so that it can interpret the syntax, and understand some of the sense behind the words.

An example of this can be found in the parser's handling of adjectives. You might type in "Open the door" — to which you would get the reply "Which door do you mean, the closet door or the bathroom door!".

The parser not only understands the key word 'door' but also that it has been used in an open or non-specific manner. Thus it analyses the context in which the word was used.

Of course not all syntax can be understood. The biggest most powerful computer in the world could not correctly interpret the infinite variety of possible sentence structures. If it does not understand a word it will "complain". But with over three hundred different types of sentences



Brian Moriarty wonders where to put his dime for coffee, cream and sugar.

identified and understood, complaints do not occur that often.

The effect of this more intelligent parser is that it gives the impression of having a conversation with the computer. Clever stuff — but not nearly as clever as Infocom's pride and joy — the Z System.

The Zee System

The Z system, pronounced "Zee", is the development machinery used by Infocom to write all their software. Years of programming time and more than a million dollars worth of computer hardware have already been invested in the Z system and they are still enhancing it.

Brian Moriarty, author of *Wishbringer* told me: "We have more raw computing power here than the average Third World Country".

At the heart of the Z System are two DEC 20 mainframes, housed in huge air-conditioned rooms, with a back-up team of engineers to maintain them. The system itself is best defined as a collection of software development tools with a heavy emphasis on interaction.

They know a thing or two about software development at Infocom — that was the founders' speciality at the Massachusetts Institute of Technology. Some of the costs of the Z System are being offset by a move into the lucrative world of business software with the launch of *Cornerstone* — an advanced database.

But make no mistake, the main work of the Z System is in developing adventure games. Six adventure writers can work simultaneously writing games from their computerised workstations.

"We can call up any piece of adventure code in a split second . . . if we see something we like we can take it down and play around with it . . . the code from all of the games is stored in the Z System" says Moriarty.

There is something frightening, clinical almost, in Infocom's hi-tech approach to 'interactive fiction' — rather like the computerised novel writing machines envisaged by George Orwell in *1984*.

That Literary Edge

Infocom would be the first to admit that a good parser and an advanced development system are no guarantee of a good game — sorry, piece of interactive fiction. They scorn graphics and produce their games only on disk, so that, parser aside, all of the combined memory of the 64 and disk drive can be used to store text.

Although the cream of the Computer Science faculty at MIT left to set up Infocom you can't help getting the impression that it's their literary achievements with 'interactive fiction' that they are proudest of.

If there was a Booker prize going for adventure game text you can bet Infocom would not rest until they had it safely in the cabinet.

The high point of these literary achievements was their collaboration with Douglas Adams, author of the *Hitch Hikder's Guide to the Galaxy*, on the adventure version. According to Joel Berez, Infocom's boss, the adventure is even more amusing and enjoyable than the book.

What the Infocom people are particularly proud of is the degree of Adams' involvement — referring to him as 'Dougie', a personal friend almost, and certainly more than just a straight business licensing deal.

Adams spent several months in Cambridge, just outside Boston, working on the text of the game, personally approving every single word.

Berez would like to do similar projects with other top ranking authors. "But only if we can get proper access to the author. We are interested in working with the writers, using their talents, and mixing them with ours . . . not simple marketing exercises . . . anyone can do that". □

The People



Albert Veza *is Infocom's Chief Executive Officer and a former professor with some pretty impressive academic credentials. Before joining Infocom, as one of the founders in 1979, he was an Associate Director of the Laboratory of Computer Science at MIT — one of the best academic posts in American computing.*

It was Veza who was the spark that ignited Infocom — persuading some of his high-flying colleagues at MIT to join his new company.



Marc Blank *is in charge of product development. Another ex-MIT man and company founder. Blank was the author of the firm's first big hit, the famous* Zork*. He also developed* Deadline *on the 'Z System' and designed the famous English language ''parser''.*



Softly spoken Joel Berez *is the business brain behind Infocom. Like the others he was in at the beginning and has a string of MIT letters after his name. Berez built the company up from a small, tight team, into a major software publisher with dozens of employees. He looks after the day to day running of Infocom and also finds time to act as an executive officer of the Software Publishers Association.*

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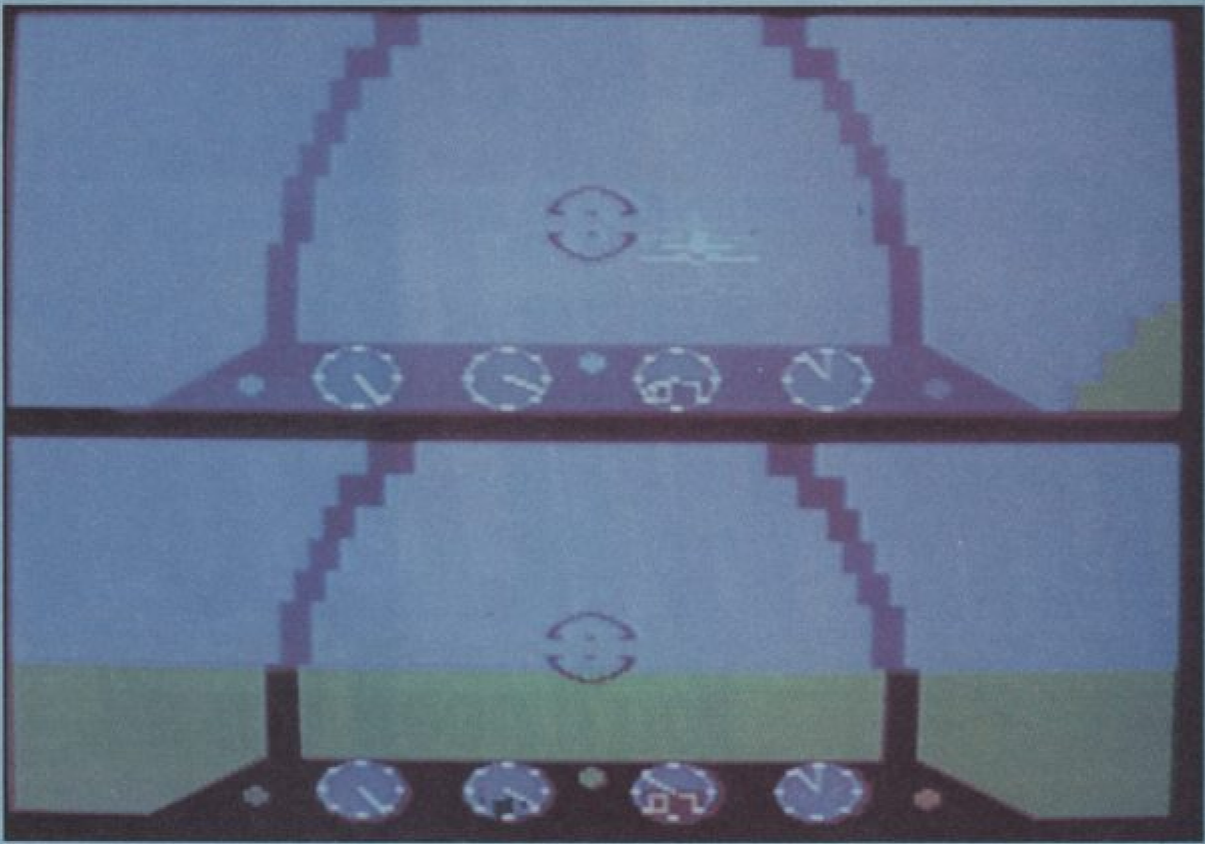


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 Screen Scene Screen Scene

The software cupboard was looking a bit bare this month, with something of a scarcity in new releases. This summer hasn't been too bad as far as games are concerned, but it seems that this month the software houses have put the brakes on to get ready for the Christmas cash-in. There are still quite a few sports simulations, though, and one of them, *Hypersports*, is this month's worthy **Screen Star**. Should you wish to specialise, there's golf and cricket. This month also has its share of racing games and flight simulators (it would indeed be a bad month without them) with *Rescue on Fractalus* and the *Great American Cross Country Road Race* proving the best of a mixed bunch. Next month we promise you a bumper crop . . .



Split screen view à la Pitstop II. *Enemy jets flash past very quickly at a close distance — but this is the time to make your kill. If you follow from a distance it's very hard to even make a hit.*

Mig Alley Ace
Commodore 64
US Gold/Microprose
Price £9.95/cass £14.95/disk

I'm not sure if the world needs another air combat simulator, but if it does it may as well come from Microprose as anywhere else.

You've all mastered F15 Strike Eagles and Spitfires so now you're ready to move onto tearing about the skies in pursuit of Mig 15s whilst at the controls of machines inferior in just about every way possible. You have to use superior flying skills to stay alive.

This simulation gives you a number of options such as the Battle for Pusan which puts you in charge of an F80 Shooting Star to defend infantry from attack by fighter bombers. Basically, whatever option you choose you're tearing around the skies shooting everything in sight.

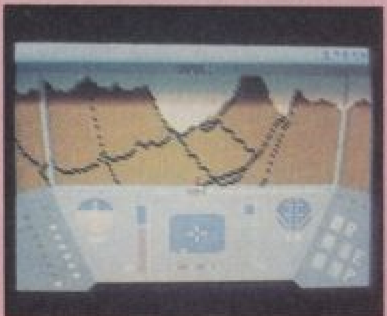
The controls are much the same as any other flight simulator with the joystick angles responding to banking left and diving as any other simulation would. Your screen display is split into two cockpit views. This is either for an opponent to fly head-to-head or the computer. The one drawback to this approach is that if you keep an eye on your opponent's display you can take evasive action when you're being lined up in the sights.

Instrumentation is simple and sparse with dials and flashing lights to indicate air speed, radar, low altitude, altimeter and ammo status. Also useful is an exhaust gas temperature indicator. When this starts flashing you know you've taken enough hits to be in trouble. Whatever you do make sure you enter your authenticate codes when you play, though, otherwise the plane won't function properly.

The gameplay is good with fairly frantic bursts of activity. Not only are you up against the enemy but also against time. Your ammo is also limited so you need to wait your moment coolly rather than blast away when your prey is on the edge of the radar screen. It's a bit of a problem trying to overhaul a plane that's faster than you so you have to lure one back if it's too far ahead.

Mig Alley Ace is certainly up to standard as far as Microprose goes, but it's not special enough to go out and buy if you've got something you're satisfied with. The graphics are only just above average. Still to come from Microprose are *Hellcat Ace*, a Second World War Pacific air combat simulator, and *Wingman*, another jet fighter simulation. M.P

Presentation:	■■■□□
Skill level:	■■■□□
Interest:	■■■■□
Value for money:	■■■□□



Rescue on Fractalus
Commodore 64
Activision
Price £9.99/cass

This is a Lucas films title so you might expect something epic from the company responsible for the Indy mega movies. A piece of software that uses 'fractal graphics' sounds pretty impressive too. Fractal graphics are what they use in flight simulators (the real pilot training ones, not the toys) to produce random 3D landscapes.

In fact, *Rescue on Fractalus* is nothing special, neither are its graphics. Your mission is to fly over a rugged, rocky landscape and rescue downed pilots. The terrain is also inhospitable because aliens lie in wait for you, zapping from gun turrets built into the rock. Flying saucers intermittently make suicidal runs at you just so's you don't get too cocky.

The instrumentation at your fingertips is all very necessary. You must refer to the long and short distance scanners, altitude meter, energy levels and compass. Keep your ears open as well for the blipping sounds. One denotes a pilot in the vicinity, the other tells you that the gun turrets are locking in on you and that it's time for evasive action.

Once you've found a pilot you descend carefully and land. He should run towards you and bang on the door. Make sure you've turned your engines off otherwise he fries. You might be unlucky and have been duped by an alien, then you get a horrible alligator-like creature who hammers on the cockpit until it breaks. Destroy the ship before you leave or the technology falls into the hands of the aliens and we wouldn't want aliens making perfect toast, would we?

Fly your rescue voyages through 16 levels of difficulty which consistently give you shorter times of day so you end up flying on your instruments.

Rescue on Fractalus provides reasonable, if unchanging, gameplay with a good flight simulator, but it lacks something, probably a proper identity. E.L

Presentation:	■■■■□
Skill level:	■■■□□
Interest:	■■■□□
Value for money:	■■■□□



A View To A Kill
Commodore 64
Domark
Price £10.99/cass

In *A View To A Kill* you get to become the ultimate in macho superheroes — Bond. Personally I lament the day when Sean Connery hung up his Walther PPK, but you don't have to be Roger Moore. You can be George Lazenby — if you're old enough to remember him.

The plot is typical Bond stuff. You must prevent the Evil Max Zorin, European electronics magnate, from blowing Silicon Valley into the Atlantic. Though why he should want to do this is anyone's guess.

There are actually three *Views To A Kill*, each one loads from tape or disk after you've completed the previous one. You don't have to complete one stage before attempting the next, but it helps because you're given a coded performance rating which gives access to useful information.

The Paris Chase has you speeding through the streets after Mayday, Bond's female adversary who has just parachuted from the top of the Eiffel Tower after killing his best mate. You must arrive at the drop point at the same time as Mayday before causing irrevocable damage to your blue Renault by smashing into walls, other cars etc. It soon becomes apparent that there's no point careering around the streets at breakneck speed while Mayday's still 900ft up. So you poodle around for the ten minutes it takes her to reach a reasonable height before going after her with the aid of your radio tracker.

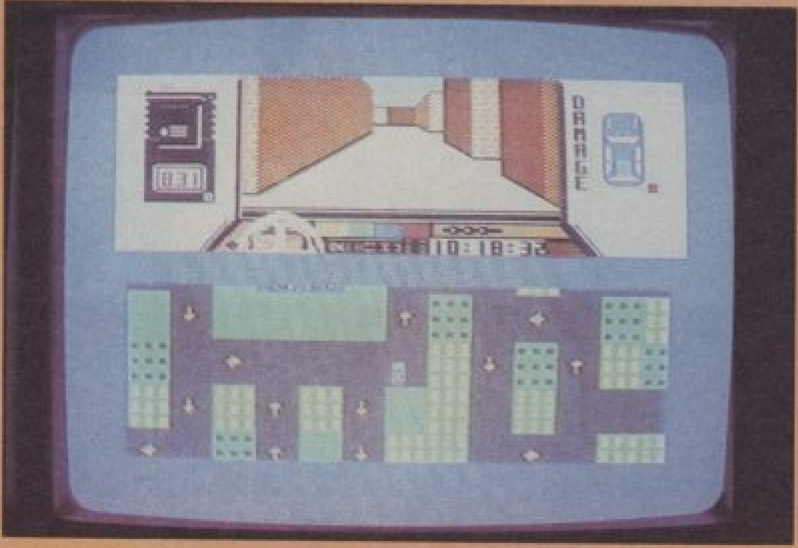
On to stage two. The City Hall is on fire and you must rescue yourself and Bond girl Stacey who is stuck in the lift. A sort of animated adventure where you have to move from room to room collecting useful things like keys, door passes, and a gun in order to extricate yourself from the burning building. Damned exciting stuff if you ask me.

The Mine is underneath Silicon Valley and Zorin has dropped a nuclear bomb down it. You must search the mine platform-game-style to find and defuse the bomb. Again, you must collect various objects like dynamite to blow up the walls and code numbers to defuse the bomb. As with all three games, action is accompanied by the film's theme music. If you're not nuts about Duran Duran you could always turn the volume down, but you'll miss out on the odd bits of speech which crop up every now and then.

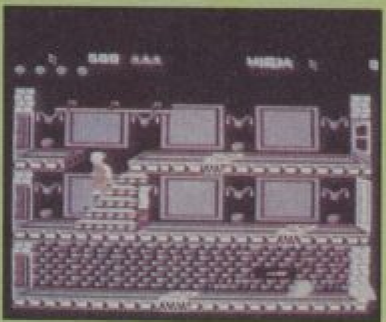
City Hall and The Mine are excellent games in their own right. It's a shame about the Paris Chase, but the thing as a whole adds up to much more than its constituent parts. Certainly one of the better 'game of the film' implementations around. K.M

Presentation:	■■■■□
Skill level:	■■■■□
Interest:	■■■■■
Value for money:	■■■□□





Top: Loading screen, the classic intro to all Bond films. The figure moves into view and fires, turning the tunnel red. Worth seeing once here but not worth the wait again.
Centre: The City Hall. Bond finds the room with the gun in it, but where's Stacey?
Bottom: The Paris Chase. Hurtle through the maze-like streets after Mayday. If you see John Lennon, you're in the wrong game.



Ghost Chaser
Commodore 64
US Gold
Price £9.95/cass
£14.95/disk

To dismiss *Ghost Chaser* as yet another platform game would be like describing *Zaxxon* as a shoot 'em up . . . true in as far as it goes but highly misleading for what it fails to point out. This game is heavy on atmosphere, extremely playable and graphically interesting. The hopping and jumping are just part of the enjoyment, not the be all and end all of the game.

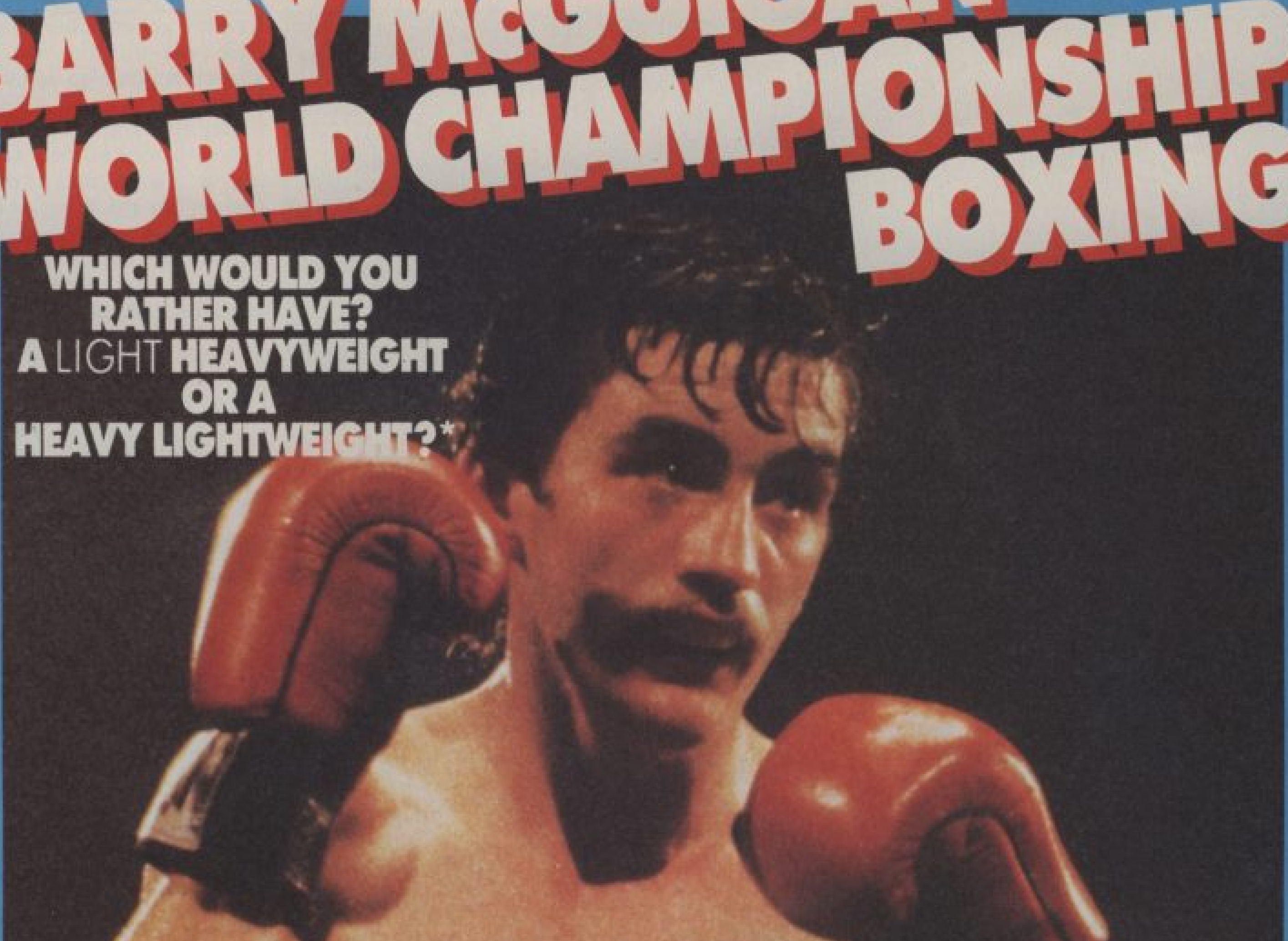
Subdued, vaguely disturbing music accompanies the option screen while bed-sheet spooks waft nonchalantly around. A stab of the fire button sets your hopeful ghost hunter in front of a tumbledown mansion. Four boarded-up windows are visible but on one the pallets have crumbled just enough to let you squeeze through.

You now begin a quickstep through the corridors, picking up and lobbing balls of elemental psychic energy at big white ghosts and evading their smaller grey chums. There are trap doors to leap across, rails to scamper along and cellars to delve into. The idea is to exorcise all the disturbed souls and grab a key before moving on to the next cluster of manifestations.

Instead of the usual barely disguised scaffolding you will note some feeling of depth created by the use of perspective draughtsmanship. A neat touch in the animation is the shivering fit caused by the chilly clasp of the spectres. Exhaustion, untimely falls through a trap door or a mistimed leap turns you into a pulsating skeleton as a life is stripped away. All in all US Gold would seem to have another hit on their hands with this well-worked scenario. L.S

Presentation:	■■■■■
Skill level:	■■■□□
Interest:	■■■■□
Value for money:	■■■■□

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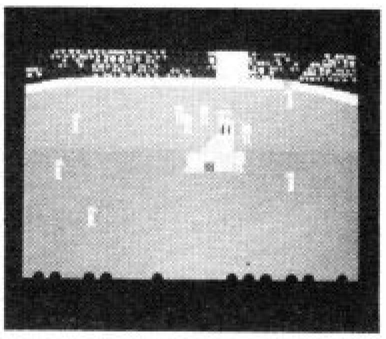
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Ian Botham's Test Match
Commodore 64
Tynesoft
Price £9.95/cass

It seems that now all sporting games have to come with an endorsement from some big name player. This, of course, has no bearing on the quality of the game, no matter how much critical input that player may have had. In this case, though, Tynesoft is fortunate, and having slipped up pretty badly with *Super Gran*, they deserve a bit of good fortune.

Ian Botham's Test Match (or Guy the Gorilla goes ape in Edgbaston) is a game for armchair cricket fans. You don't have to stir from the living room or get anywhere near the nasty hard ball to play the game. It's not, however, one for the bedsitter, though, because you need two players, or two joysticks and very well co-ordinated feet.

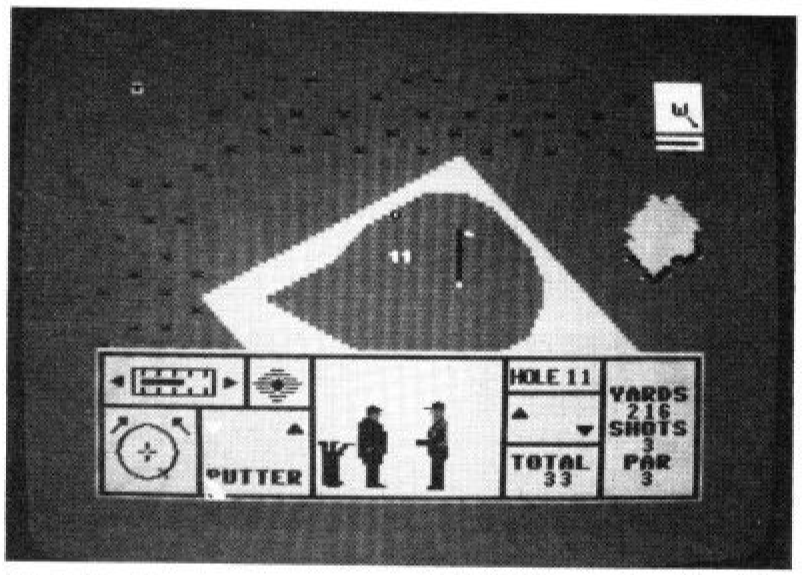
Select an option from 'limited game', 'one day', and 'Test match', and you're ready to set your field. Deposit men around the field with the joystick in any way you feel fit, and select from the bowling options of spin, bouncer, medium and fast. A mild grumble here because everything pitches the same way, that is, like a leg break. So the only difference is the speed with which the ball is delivered, so a bouncer, which should be pitched halfway down the wicket, ends up much the same as a fast ball.

As batsman you are trying to penetrate the field with an array of strokes from the joystick. This is the tricky bit, hitting the ball is not easy, in fact to begin with I got nowhere and began to think it was bugged. What it takes is good timing. You have to hit the ball very late to make contact. Moving the joystick to one of its eight positions directs the ball. Not quite like cricket where the stroke must match the ball, but fun anyway.

Finally, you must field the ball once it's been hit. You do this by moving a cursor, which appears when the ball is delivered, to the fielder nearest the ball. This activates the player and you can move him to the ball. A stab of the joystick button returns the ball and you may have run the batsman out.

Ian Botham's Test Match is not a graphic masterpiece in the style of *Graham Gooch's Cricket*. The players are indistinct and tend to move as if they were on a skateboard. But it is playable and is thus a worthy addition to the cricket simulations currently available. **M.P**

Presentation:	■■
Skill level:	■■■
Interest:	■■■■
Value for money:	■■■



Nick Faldo Plays The Open
Commodore 64
Mind Games
Price £9.95/cass

Hand me my mashie, it's golfing simulation time. A welcome change, this, from football or some obscure corrupted American game.

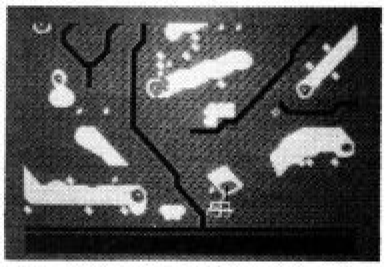
It's not just any old game on any old course either. This is the Open Championship at Royal St George's. Each hole is painstakingly represented with bunkers, fairways and pins all in the exact position.

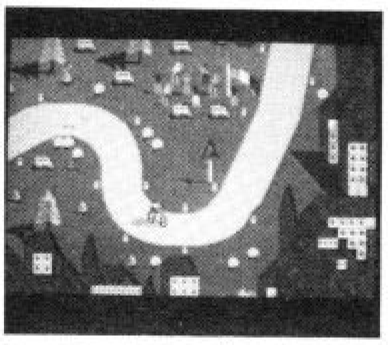
Your screen is split up into six different sections. The top half represents the course in close up, from a vertical viewpoint. Wind direction is signified at the top right-hand side. The bottom half is a number of smaller sections in which you select club type, strength of shot and direction of shot. You choose your options which are displayed icon-style on the screen with a little hand that you move around with the joystick.

The centre of the screen is taken up with the animation. When you've finished choosing a club and got yourself all settled you hit the fire button. The caddy may well ask you if you're sure of your choice and it pays to listen to him. He dresses badly, but he knows his clubs.

The gameplay is good. You won't master this quickly. The graphics aren't that great. I'd say my man has a bit of a hunched action, which is probably why the ball isn't going far enough. My only niggles are the map, which is not all that clear to begin with (I got lost several times) — the sixth is particularly confusing. The only other drawback is that it's a bit slow. But it's a slow game, so I suppose it doesn't matter. **M.P**

Presentation:	■■■
Skill level:	■■■
Interest:	■■■
Value for money:	■■■





Tour De France
Commodore 64
Activision
Price £9.99/cass

Sacre Bleu! C'est le new game from Activision, Tour De France. Avec beaucoup d'anticipation je popped it dans la cassette player and waited for it to load.

Alors, there are two modes of play, practice and competition. The only difference as far as I could see was that in competition mode up to six people can play (not all at the same time) and each player can choose to represent the country of their choice. Having got that out of the way (there's a lot of messing around before you actually get started), you must decide whether you want to take a crack at the whole tour, or selected stages (etapes). Each stage has to be loaded from tape as you come to it, which is somewhat tedious, but inevitable in any game which occupies more memory than the 64 has to offer.

Before you get pedalling you first have to choose a bike/jersey combination. This affects such properties as cornering ability, gear ratio, top speed etc. Finally, you get a chance to ride the damn thing.

Graphically it looks pretty good. You are presented with an aerial view of the French countryside complete with houses, waving fans, trees, advertisement hoardings, road and cyclist.

Pedalling is accomplished in the standard manner of wiggling the joystick back and forth like a maniac. If this embarrasses you, use the keyboard instead. To turn you must use the joystick with the fire button depressed which means you can't pedal at the same time. Any deviation from the narrow winding road results in a crash and you have to jump back on and build up speed again.

Doesn't sound very exciting does it? I think there are three things wrong. It's not fast enough. You bust a gut trying to build up speed only to dawdle to a virtual standstill whilst manoeuvring. There isn't enough difference between the sixteen stages to warrant their inclusion and the messing about with loading it involves. Lastly there's no competition. You're all on your tod, and racing against the clock is no competition. C'est un shame, mais c'est la vie je suppose. **K.M**

Presentation:	■■■
Skill level:	■■■■
Interest:	■■
Value for money:	■■■

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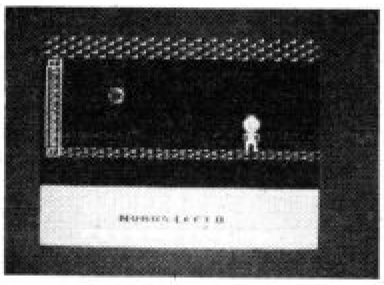
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Whirlinurd
Commodore 64
US Gold
Price £9.95/cass £14.95/disk

This is not my favourite US Gold program by a long chalk. *Whirlinurd* is pretty standard stuff really and very similar in concept, though not detail, to umpteen other 'obstacle' games. Some people lap 'em up . . . others have been known to yawn away into a state of peaceful oblivion.

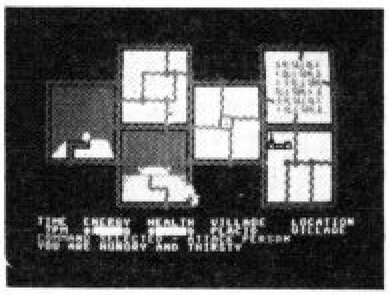
Hamish Pupkin (your alter ego) has rotor blades super-glued to his bonce and a handy turn of speed when it comes to a quick dash. You have to gobble up food after picking your way through highly agitated sentinels. Swivelling eyeballs, marauding alone or linked in snaking strings, seem to be your main enemy. These are aided and abetted by showers of deadly glow-balls and electric worms. That's not all. Laser beams come gushing from the floors, adding to the hazards, all of which tend to split our hero assunder.

The unwary might walk over air jets which will blast you ceilingwards. There's doors to unlock, too, so be prepared to nab keys. Half of the challenge lies in not being able to see the lie of the land. Only a part of each room is visible; you need to scroll your way into action getting ready for a quick about turn. The copy I fooled around with was pre-production, but it appears that you have to discover passwords should you wish to select further sectors.

For me, the neatest part of the program is the way the hero looks bored whenever you keep him standing around too long: he taps his feet, glances here and there and looks very glum. Hey, that's art!

As I said, not in the top band but you couldn't really slate it. L.S

Presentation:	■■■■
Skill level:	■■■
Interest:	■■■
Value for money:	■■■



Mad Doctor
Commodore 64
Creative Sparks
Price £8.95/cass

Mary Shelley's probably turning in her grave. *Mad Doctor* is the computer version of that most famous grizzly horror story, Frankenstein. Only the names are different.

You are Doctor Franz Johan Blockenspiel, better known to the locals as the Mad Doctor. Justifiably so, in fact, because your ambition is to create a living being from the remains of dead ones and you don't care how you go about it.

You start out at home in the castle. The first thing you require is a body from which to collect bits for your creature. Altogether you need a head, brain, arms, legs, body and, of course, a bolt. To find these you must wander around the village looking for suitable corpses from which to collect spare parts.

Good places to look are the graveyard and the village centre, where you will find a corpse swinging from the gallows.

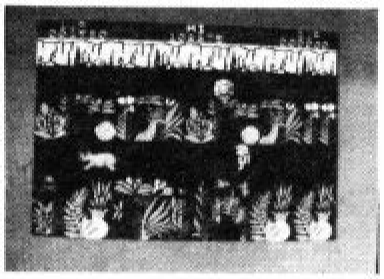
If you can't find a useful looking corpse you can always try murdering one of the villagers.

Having built your creature you must carry it to Lightning Hill and fly your previously acquired metal kite, the lightning strikes and hey presto, one animated corpse.

If you've done your work well and the thing doesn't go looney and kill you then you must present him to villagers in the hall. They will either hail you as a genius or hang you if they don't like what you've been up to.

Mad Doctor is the most enjoyable game I've played in a long while. The graphics aren't what you'd call superb but the idea is brilliant, if requiring a somewhat gruesome sense of humour — pass me the mallet. L.S

Presentation:	■■■■
Skill level:	■■■
Interest:	■■■■
Value for money:	■■■



Sabre Wulf
Commodore 64
Firebird
Price £9.95/cass

Sabre Wulf was Ultimate hit number four — a game that zoomed straight to the top of the charts when it was launched for the Spectrum last year. Two issues ago, Commodore User reported that Ultimate had sold the 64 rights to Firebird. The conversion is now in the shops and here's the first review.

Once the game is set up, early impressions are of a rather dated game design. Little man chases around multi-screen maze, dodging nasties, and collecting several parts of an object which will enable him to get into the final part of the game.

I expected to be bored stiff by yet another chase, dodge and collect game but I wasn't. *Sabre Wulf* is so playable that you forget that the game is basically the same as dozens of previous arcade adventures.

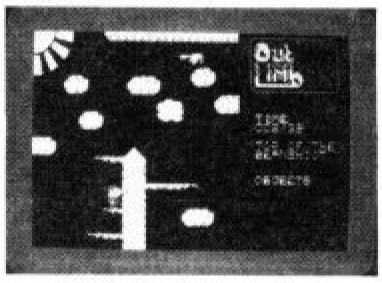
Set deep in a tropical jungle resplendent with exotic plants and wildlife, there are also warlike natives and the mysterious Sabre Wulf, from which the game takes its name, is hiding among the dense foliage intent on stopping you from finding the four pieces of the Amulet.

As you move around the screens, certain flowers will appear in your path. It is useful to eat some of these as they convey special powers. But watch out for the poisonous ones.

Mapping is essential in *Sabre Wulf* as the play area is made up of no less than 256 screens.

When you have all four parts of the Amulet, they piece together to form a wolf's head. You can now escape through the secret gate in the Wulf's lair. If you get this far you will read a secret message which tells of Sabre Man's next adventure — Underwurlde. This, as you might imagine, can also be purchased from Firebird Software. An enjoyable arcade adventure — though not really in the supergame class. E.L

Presentation:	■■■■
Skill level:	■■■
Interest:	■■■
Value for money:	■■■



Out on a Limb
Commodore 64
Anirog
Price £6.95/cass

'Fe Fi Fo Fum, I smell the blood of an Englishman'. That sexist, racist giant is back again, this time leading Jack, i.e. you, a merry dance through 23 'locations'. You are in search of those ever elusive treasures: a harp, a bag of gold and a golden egg.

Out on a Limb is a good title for a game which frequently leaves you perched on branches, clinging onto clouds and dodging demented ducks. The majority of locations are what you'd expect to find in any giant's domain, like a cellar, a watchtower and Australia . . . Australia?!

What we have here is a decidedly platform-oriented jaunt with Jack jumping over all manner of things. The best advice on this comes from the programmers — avoid anything that moves, and that includes double quavers in the music room and hoovers on the landing.

The advantage of having so many scenes is that it encourages you to proceed on to the next location. If you don't you'll never find out what awaits you in Rapunzel's tower. The drawback is that unless you master the hopping, boredom and frustration set in pretty quickly and you don't care what happens in Rapunzel's tower!

Out on a Limb is a competent game with good graphics and a really nasty sounding giant as a voiceover. However, it's not very fast and can't be called exciting. It's not very novel either. J.M

Presentation:	■■■
Skill level:	■■■■
Interest:	■■■
Value for money:	■■■■

Hypersports
Commodore 64
Imagine
Price £8.95/cass

SCREEN STAR

You've pumped all your money into the arcade version so now take the thing home and play it on your 64. Imagine have converted the follow-up to Konami's classic *Track and Field* and brought it to your living room.

It's identical to the original arcade game, except that it lacks the pole vault event. Otherwise the graphics and gameplay are so similar that you find yourself looking for a coin slot.

Make sure your joystick's passed its MOT and prepare to waggle and jab frantically through six exhausting events.



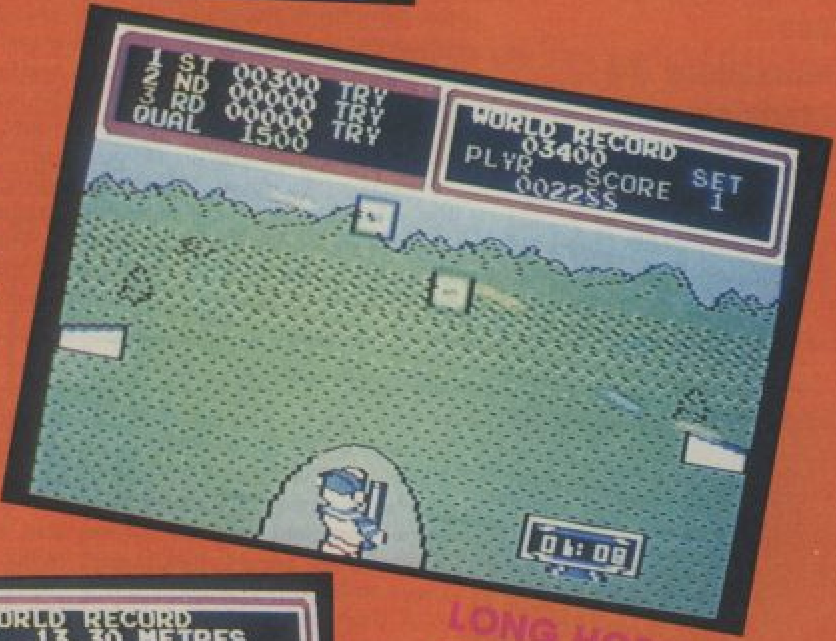
SWIMMING

Thrash the stick left and right, but make sure to hit the fire button every time 'breath' flashes on the screen. Get it wrong and you swallow water and make a sound like a clubbed seal. You have plenty of time to qualify at this stage.



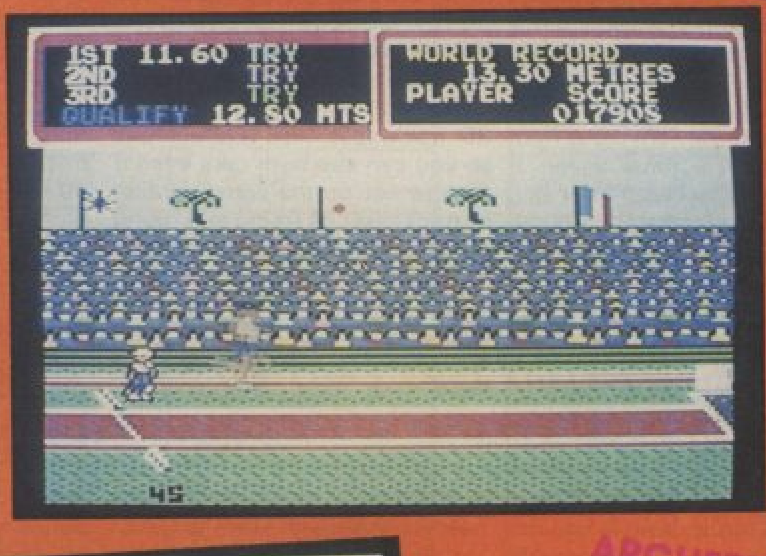
SKEET SHOOTING

This is one of the more simple events. It's all down to timing. Move the joystick left and right to pick off the skeets which shoot past. Switch left to pick off the bonus discs. It's a good idea to use the shift keys for this event.



TRIPLE JUMP

The weakest of options and nowhere near the event simulated in *Summer Games II*. Hit the fire button three times and keep to 45° to qualify.



LONG HORSE

Probably the toughest event. Hit the fire button to take off from the board, and again to vault from the horse. Waggle the joystick to somersault repeatedly. Plenty of height and a good landing are essential. Points are not awarded for landing on your head!

WEIGHTLIFTING

You'll need a high protein diet for this one. Pump up your power by waggling left and right, and hit the fire button when the weights flash. Keep pumping until the judges give you the nod. Work that body!



ARCHERY

Take account of wind speed and hold the fire button down to get the right elevation, and release to fire.



You have now completed *Hypersports* and hopefully broken a few records on the way. A good sports simulation, and there's no reason why you shouldn't have this and *Summer Games II*, because only one event is the same. Don't expect *Hypersports* to be quite in the same class, though, the loading music is the most impressive I've ever heard. M.P

Presentation:	■■■■
Skill level:	■■■■
Interest:	■■■■
Value for money:	■■■■

TOP GEAR



The Great American Cross-Country Road Race
Commodore 64
Activision
Price £9.99/cass

The summer hols are noted doldrums for software releases, yet even with much stiffer competition this game (with a title of almost epic proportions) would still be reckoned a very good game. When you load up, you're unpacking a journey, an illusion gamesters can readily latch onto as the coded scenery bursts into life in the living room.

The 'circuit' race games typified by *Talladega* and *Pitstop II* are justifiable favourites but GACCRR takes you away from the confines of the track and sets you loose on Route 66. We are talking the stuff that American road movies are made of.

Think of it . . . cruising along major highways using all your verve as a rally driver, reacting to the constraints of the weather and speed traps. Taken in isolation, each segment of the program is run-of-the-mill, but knitted together they produce entertainment in depth and that's what game-designing is all about.

You start off by selecting a basic West-to-East route and the opposing field (previous mega-achievements can be loaded back into this hall of fame). You then proceed to the map screen where you indicate the start time and next port of call. Perhaps you feel it's good strategy to avoid night driving or rush-hour traffic, while a diversion might be expedient should the direct route be in the grips of a snarl-up. You get to see the nationwide weather report every time a stage is completed.

The picture changes to a view of the road with your dashboard displayed at the foot. You 'follow' your own car along a 3D road, changing gear in response to the tachometer red-band and wringing the last drop of acceleration from the engine. Of course you need to fill up with gas (or push!) and take account of radar, police speed traps, whilst weaving in and out of the other traffic. Crunch! Off the road with precious seconds ticking by. Nights melt into dawns, green fields give way to deserts and cities loom on the horizon. You'll still be racing come Christmas. **L.S**

Presentation:	■■■■□
Skill level:	■■■□□
Interest:	■■■■□
Value for money:	■■■■□



Racing Destruction Set
Commodore 64
Ariolasoft
Price £11.95/cass £14.95/disk

At first glance *Racing Destruction* looks pretty interesting. A racing game with a difference — several differences actually. You can design your own circuit using straights, bends, ramps etc. If your imagination is lacking, fifty of them are provided on the disk or tape.

You can choose and customise your own vehicle, anything from a Stingray to a lunar rover. If you're not happy with your bog standard lunar rover you can change the tyres or engine and a few other things besides.

If straight racing doesn't amuse you (i.e. whizzing round the track trying to beat the other guy), you can go in for destruction (trying to bomb the other guy off the road). Though for this you'll need to stock up with a few weapons at the customisation stage. If you still want to mess around you can alter the gravity. Earth, Venus, Saturn and Uranus are the options available — wacky.

The race itself takes place on a 3D track split over two screens so you can see both cars even if they're not on the same section of track. You go round and round and round for the preset number of laps, then, when you've finished, the computer tells you who's won and the time. You don't have to steer the car, just make the odd alteration to course and speed to avoid crashing, which seems to happen quite frequently regardless. To describe the pace as pedestrian would be doing it a favour.

In short, this game has no problem in qualifying as one of the dullest games I've seen on the 64. For all the messing about with the vehicles, circuits and gravity, the race itself is as boring as hell. **K.M**

Presentation:	■■□□□
Skill level:	■■□□□
Interest:	■□□□□
Value for money:	■□□□□



Speed King
Commodore 64
Digital Integration
Price £9.95/cass

Why do people continue to bring out racing simulations with the likes of *Pole Position* and *Pitstop II* about? This is just one of three this month but at least it has the merit of being a motorcycle game.

You're not actually told what you're racing, but whatever it is it's fast: six gears which take you up to 250 mph and make the screen whizz round so quickly you start to feel sick. You have the option of racing on any of ten world circuits like Brands Hatch, all of whose shapes are faithfully reproduced on a little map. Quite why companies bother with this I'm not sure because once you're careering around at speed, one bend looks much the same as another.

The real test obviously of these things is just how exciting and drivable the whole thing seems. Although the graphics are good, especially when you bank, *Speed King* leaves me behind a bit, I'm afraid. Once you've chosen your skill level, course and number of laps, you go straight into the game with nineteen other riders, all of whom are in front of you. So far so good, you've got to work your way through the field to win.

My grumble is with the controls. You have six gears and to change up you pull back on the stick, and to change down you push forward. You accelerate by keeping the fire button pushed down, but if you take your finger off the button you decelerate. You cannot hold constant speed and if you're used to other racing games you find yourself pushing the joystick forward and back and thus losing all momentum and crashing through the gears. It's a mite too sensitive.

This sounds like it's my problem, but I can see a lot of other people suffering it as well, especially if they're used to any of the other racing games. *Speed King* is alright as far as it goes but it adds nothing new to this type of game. **M.P**

Presentation:	■■■□□
Skill level:	■■■■□
Interest:	■■■□□
Value for money:	■■■□□

CHARTS

WE TOLD YOU SO!

This month's Commodore 64 chart contains no less than *five* of our **Screen Stars**, and at least a dozen more which came highly recommended. Our record so far this year shows that only two of our Screen Stars have failed to make the top twenty — and they were *Conan* and *Gates of Dawn* [no accounting for taste, is there?]. Bearing in mind the deserved popularity of *Soft Aid*, we have had two number one predictions in *Impossible Mission* and *Way of the Exploding Fist* and two other top three games in *Dambusters* and *Fighter Pilot*.

So stick with **Commodore User** for the best guide to the best games around.

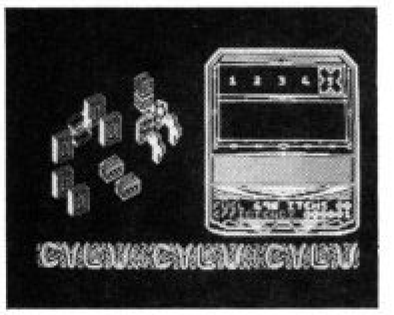
Just to prove our worth we'll stick our necks out this month and predict mega stardom for *Summer Games II* and *Hypersports* in the coming months. Just watch us!

COMMODORE 64

	Title	Publisher
1	Way of the Exploding Fist	Melbourne House
2	Elite	Firebird
3	Soft Aid	Various
4	Pitstop II	Epyx/US Gold
5	International Tennis	Commodore
6	International Basketball	Commodore
7	Dambusters	US Gold
8	Action Biker	Mastertronic
9	Kick Start	Mastertronic
10	Impossible Mission	Epyx/US Gold
11	G. Gooch's Test Cricket	Audiogenic
12	View to a Kill	Domark
13	Shadowfire	Beyond Software
14	Finders Keepers	Mastertronic
15	Rocky Horror Show	CRL
16	Cauldron	Palace
17	Entombed	Ultimate
18	Theatre Europe	PSS
19	Drop Zone	US Gold
20	Thing on a Spring	Gremlin Graphics

GENERAL CHART

	Title	Publisher
1	Way of the Exploding Fist	Melbourne House
2	Hypersports	Imagine
3	Soft Aid	Various
4	Elite	Acornsoft
5	Cauldron	Palace
6	Rocky	Gremlin Graphics
7	Jet Set Willy 2	Software Projects
8	Combat Lynx	Durell
9	Action Biker	Mastertronic
10	Spy Hunter	US Gold
11	Rocky Horror Show	CRL
12	D. Thompson's Decathlon	Ocean
13	Spy Vs Spy	Beyond
14	Alien 8	Ultimate
15	World Series Baseball	Imagine
16	View to a Kill	Domark
17	Gremlins	Adventure Int.
18	Pitstop II	Epyx/US Gold
19	Shadowfire	Beyond Software
20	Ghostbusters	Activision



Cylu
Commodore 64
Firebird
Price £2.50/cass

Gasp! It's *Knightlore* on the 64 for only £2.50, was my first thought when Firebird's latest game, *Cylu*, flashed onto my screen.

The game features a split screen — the right-hand side showing an information panel and the left showing the play area which looks for all the world like the Ultimate Spectrum award winner.

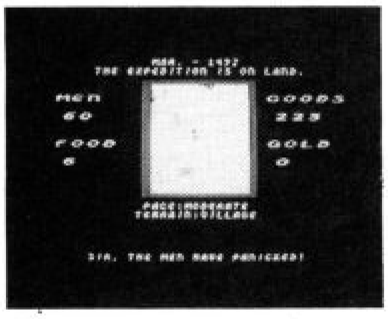
Firebird are playing down the similarity to *Knightlore* — pointing out all the differences. This seems sensible because, visual similarities aside, it's nowhere near as good as the Ultimate game and, in fairness to Firebird, they are more or less admitting this by placing it in the budget range. That said — it's still a good game in its own right.

The object is to collect 24 objects scattered throughout a maze made up of over a hundred screens. You play the part of an insect-like droid that walks with an excellent clockwork-like motion. The 3D graphics mean that you have to make the droid walk at fairly acute angles to go forward, backwards, left and right. Takes a bit of mastering, this.

When you have deposited the objects in the Master Computer you can set about disabling the 32 force fields that stop you travelling freely around the maze. Other useful objects in the maze are teleporters requiring the correct keys and fuel cannisters.

Cylu is a master strategist's game. Don't expect to solve it at the first, or even second sitting. It's a really meaty arcade adventure with excellent graphics. The best budget game I have seen since Mastertronic's excellent *Clumsy Colin*. E.L

Presentation:	■■■■
Skill level:	■■■■
Interest:	■■■
Value for money:	■■■■■



Seven Cities of Gold
Commodore 64
Ariolasoft
Price £14.95/disk

Seven Cities of Gold casts you in the role of a fifteenth century Spanish explorer. The court has very generously granted you a loan of two thousand pieces of gold to indulge your wanderlust. Before you actually get your hands on the dough and binge it away in the pub the computer wisely uses it to kit out your exploration with all the necessary gear.

Hence, you set sail with four ships, one hundred men, fifty two weeks food rations, three hundred trading goods and some small change.

Finding the New World isn't a difficult task even for the novice navigator. Pushing the joystick left sets the cursor moving over the waves in a westerly direction.

After a minute or so and the odd thunderstorm the first islands appear off the starboard bow. Using a simple menu system you must drop off a landing party, transferring men, food, and goods to trade with the local inhabitants. Movement overland is accomplished as when at sea. Moving the joystick causes your cursor to move over the terrain cautiously, moderately, even recklessly.

When you come across a native village, the view expands to fill the window through which all the action occurs. Now you must make your way to the centre of the village to speak with the chief and attempt to trade your goods for food and gold. This can be pretty difficult at the best of times because the natives follow you around. If you bump into too many of them they become extremely aggravated and you have to flee for your life.

Thus you make your way around the New World. As well as trading with the villagers you can discover gold mines, rivers and forests.

When you start to get homesick, or food is running low, you can set sail for home. This again is fairly easy to find — I managed to get there despite being on the wrong latitude.

Once back in Spain you can visit the court, where you will be rewarded for your efforts, perhaps with a loan to fund further exploration. If you want a rest, a trip to the pub will enable you to save your progress so far.

Seven Cities doesn't fall into the brilliant category but it's not a bad game. Although I played it for about three hours on the trot I don't know whether it would have held my interest night after night. Furthermore my conscience wasn't happy playing a game where a white trader makes his way through villages full of drum banging, spear waving black natives. Dubious. K.M

Presentation:	■■■
Skill level:	■■■
Interest:	■■■
Value for money:	■■



Vortron
Commodore 64
Budget Software
Price £2.99/cass

"Prepare to die player 1", said Vortron at the beginning of the first sheet of aliens on Alligata's new budget-priced shoot 'em up. I couldn't believe my eyes. What a cheek — and from a £2.99 job as well. I wasn't going to take that.

My reviewer's back was well up as I began to blast away at the bird-like aliens that crept down the screen like they were coming off a conveyor belt.

You get nine levels of play. When you have blasted all the nasties in stage one you go on to the next, tougher level.

Trouble is, until you get to about the eighth and ninth levels you don't really notice very much difference in difficulty.

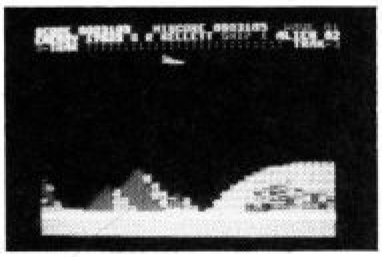
The idea of the game is to protect your planet's central core — this looks like a purple gob stopper — from the marauding nasties.

Control of your ship takes a bit of mastering. There is a peculiar gravitational pull operating towards the core. The knack is to bounce off the sides of the screen and the central core so that you can pick the nasties off.

On the tougher levels the nasties emerge from the bottom of the screen as well as the top — so careful control of the craft is needed on these levels as well as a quick finger on the fire button.

Vortron has some neat sound effects but these do not make up for the third rate graphics. Just a boring old shoot 'em up with very little to recommend it. E.L

Presentation:	■■
Skill level:	■
Interest:	■
Value for money:	■■



Raskel
Commodore 64
Budget Software
Price £2.99/cass

We've had our differences with a certain J. Minter Esq. on the User before but one thing you can't take away from the hairy one and that is that few people know as much about the classic arcade game *Defender* as he does.

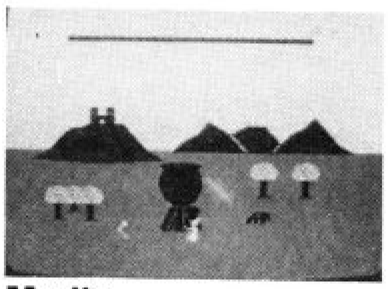
The hippy got so hooked on it that he bought an arcade machine to have at home. So when a real Defender fan like Minter says that the best version he's seen on the 64 is Alligata's *Guardian* you have to take notice.

That's high praise for Alligata so you can't help wondering why they should want to tarnish their reputation by bringing out a third rate version on their new Budget Software label.

Despite some pretty ground level graphics and a wide variety of attacking aliens the game lacks appeal. It is difficult to manouevre your craft. It responds sluggishly to the joystick and often takes an age to edge across the screen. There is an equivalent of a Smart bomb — but this lacks the explosive graphics that are needed to be convincing as an all-killing mega bang.

If you want a version of Defender then my advice is forget Raskel and get Alligata's Fistful of Fun for £9.95. This is a compilation tape that contains the excellent *Guardian* as well as a couple of Tony Crowther classics — *Blagger* and *Son of Blagger* with one other game thrown in. Much better value than this so-called budget tape at three quid. E.L

Presentation:	■
Skill level:	■■
Interest:	■
Value for money:	■



Merlin
Commodore 64
Creative Sparks
Price £2.99/cass

Merlin is one of Thorn's cheapo 'Sparklers' range. It may be bargain-basement but there's certainly nothing nasty about it. Nothing, that is, except for the bits that are supposed to be nasty.

Action takes place on a simple, but well designed, backdrop screen. On the first level this has Merlin's pot sitting in the centre, a castle on a distant hill, some mountains and a forest. Cute. Merlin zooms around the screen under control of your joystick.

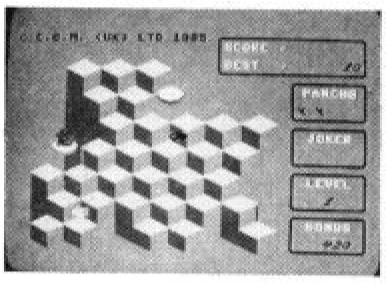
You must pick up various objects (frogs legs, skulls, that kind of thing) and drop them in the pot. Why you may ask? Well, Merlin must have a magical brew in order to keep his strength up. He needs this strength to destroy the evil nasties. The evil nasties try to destroy his brew by dropping antispells on parachutes into it. A kind of vicious magic circle.

Once you've managed to complete a few brews (things were happening too fast for me to count) you get to move on to level two, and eventually three. The only thing that really changes is the scenery and the form the creatures take. They change from bats to spiders. They fire at you, which makes them kind of unpleasant, but being Merlin you can withstand a good few hits before losing one of your three lives. You can also fire back of course.

The only thing you have to be really wary of is the blue hellwasp which kills on contact. The blue hellwasp, in fact, was the only thing that really miffed me about this game. Several times I materialised right on top of it, causing instant death before I even had a fighting chance.

Even taking account of the hellwasp, Merlin is an excellent little game and a bargain at three quid. **K.M**

Presentation:	■■■■□
Skill level:	■■■□□
Interest:	■■■■□
Value for money:	■■■■■



Pancho
Commodore 16/Plus 4
Commodore
Price £5.99/cass

If the word Qbert means anything to you then you'll have a good idea of what *Pancho* is all about. For Pancho, bar a few cosmetic alterations, is Qbert. This kind of thing used to be considered rather naughty, now even respectable old Commodore can get away with it. How times change.

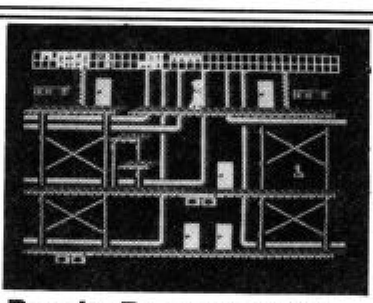
As Qberts go, Pancho is a very good one, with one exception which I'll come to later. The screen, or board, is made up of square blocks in a sort of 3D bar graph arrangement. On either side of the block structure there is a 'magic carpet' — a kind of safe hiding place you can sit on when things get tricky. At the start of the game Pancho sits on one of these and a jumping bean and Mad Mexican Muncher occupy the other.

Controlling Pancho, you must hop diagonally from block to block painting them a different colour as you land. The jumping bean hops around repainting them so you must splat him if you don't want all your hard work undone. In the meantime you must also avoid the Mad Mexican Muncher who will splat you if you don't watch out. Occasionally a block with a chequered surface appears and landing on this will gain you an extra life in addition to the three you start with. These chequered jobs don't hang around for long, though, so you have to be quick. You also have four *jokers*, panic buttons which return you to the safety of a magic carpet when things get hairy.

If you manage to complete the first screen, the next requires two coats of paint, then three and so on. The Munchers also become more numerous which makes life extremely difficult.

Pancho is a hard game to fault. An arcade classic well imitated with excellent colour and graphics, and good sound. Just one grumble. Using a joystick it's very difficult to get Pancho to go where you want and when you want. This is infuriating because you lose out through no lack of skill on your part. The instructions on this point were wrong as well. I achieved better results with the keyboard once I got the hang of it. **K.M**

Presentation:	■■■■■
Skill level:	■■■□□
Interest:	■■■□□
Value for money:	■■■□□



Burt's Brewery Biz
Commodore 64
US Gold
Price £9.95/cass

Unkind reviewers of *Burt's Brewery Biz* would say that the programmer couldn't organise a ****-up in a brewery.

Another climbing game which, although it won't refresh the parts of your 64 that other software cannot reach, will keep you amused for at least a couple of hours.

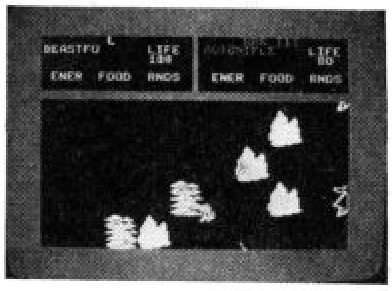
You control the beer-gutted hero as he leaps around the platforms, collecting the keys, in the three main areas of the brewery: Production, Control, and Dispatch.

The game features the doors with nasties hidden behind them technique — featured in several other climbing games.

As you hop around the platforms you have to collect the keys that are deposited throughout the factory. One of the major drawbacks with this game is that the different rooms do not appear logically connected to the previous ones. You tend to appear in certain rooms for no clear reason — the effect being that you too easily lose any sense of direction. Interest in the game goes soon after as well.

Graphics are well-polished, though nothing spectacular. The scenario of a brewery should have provided the designers with the material for a great deal more humour. I didn't spot one frothing pint or tipsy employee. Not one of US Gold's best imports. **E.L**

Presentation:	■■■□□
Skill level:	■■□□□
Interest:	■□□□□
Value for money:	■□□□□



Mail Order Monsters
Commodore 64
Ariolasoft
Price £11.95/cass
£14.95/disk

Mail Order Monsters is a bit like *Racing Destruction Set* with prehistoric animals instead of cars. Wanna hear more? O.K. you asked for it.

Select a morph, it says. The morphs are the beasties that do battle and, assuming you are not playing a friend, you have to choose one to play against the computer's choice. The morphs have differing traits such as life, speed, muscle and brains, and carry different arms. Various options are tyro, bronto, hominid, arachnid, and pterasaur. Once your choice is made the disk drive whirrs into action and loads the battlefield. Tape users must wind on to the appropriate spot. To relieve the boredom you hear the message 'in transit to whichever battlefield' but, regrettably, the feeling persists right through the game.

And so to the battlefield of which, I am told, there are eight. Once you're on the battlefield which, incidentally, is quite large, occupying several screens, it's simply a question of stalking around slugging your opponent whenever you get the chance. Eventually one of you dies (merciful release) and it's time to start again.

The funny thing about *Mail Order Monsters* is that in every other respect it's excellent. The graphics and sound are nothing short of superb, and the thing is really well put together. But in the one vital aspect it's incredibly lacking. In other words it's a deathly bore to play. The approach seems to have been that if a game fills 100K and gives the player a hundred different weapons to choose from then it's alright. Sadly, a bad game done on a grand scale is just twice as boring. **K.M**

Presentation:	■■■■□
Skill level:	■■■□□
Interest:	■□□□□
Value for money:	■□□□□

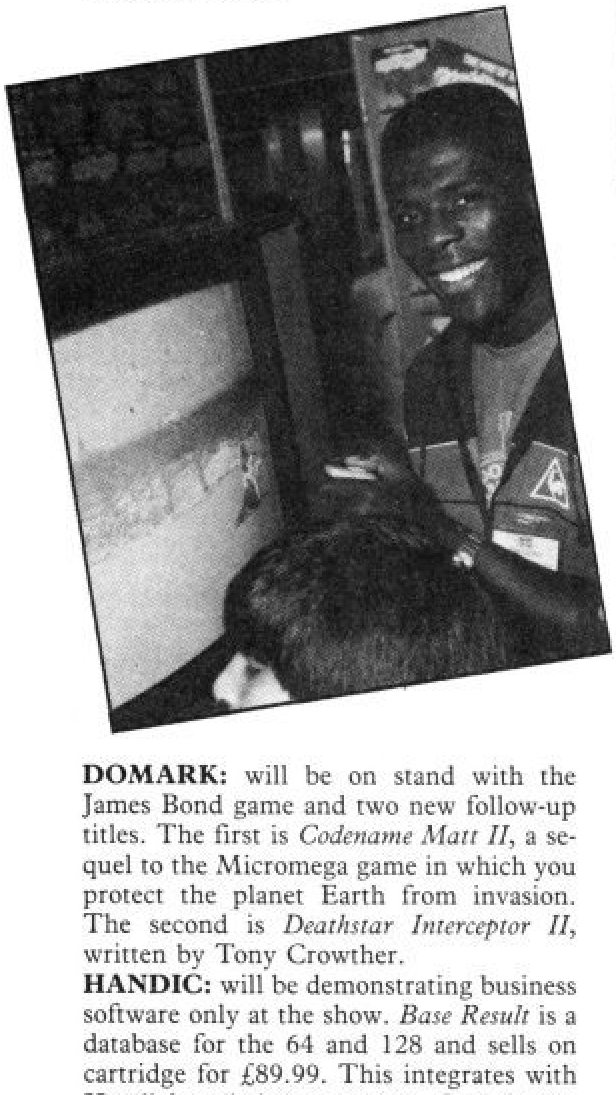
THE 1985 PCW SHOW

So you thought the annual Personal Computer World Show was strictly business? Well you'd be wrong because this year some of the stands will be devoted not to databases but solely to games. Held at London's Olympia, the show is open to the public from 6-8 September. Whether you can or can't make it, here's our indispensible guide to the highlights for Commodore users.

BUBBLE BUS: will be demonstrating their latest game for the 64, a conversion from the Spectrum entitled *Wizard's Lair*. It's an arcade adventure that sells for £8.95.

ALLIGATA: have a number of new games on show. They are currently producing programs under several brand name titles. On the Rhino brand is their latest 64 offering *Z*. This is a space-age zapper full of fast action and full directional scrolling which sells for £7.99. Budgie is the company's low budget titles label and two games will be on show, *Vortron* and *Raskel*, selling at £2.99. The other title on show is *Shoot 'Em Up*, but we'll leave you to guess what that one's about.





DOMARK: will be on stand with the James Bond game and two new follow-up titles. The first is *Codename Matt II*, a sequel to the Micromega game in which you protect the planet Earth from invasion. The second is *Deathstar Interceptor II*, written by Tony Crowther.

HANDIC: will be demonstrating business software only at the show. *Base Result* is a database for the 64 and 128 and sells on cartridge for £89.99. This integrates with Handic's existing program, *Calc Result*. *Calc Result*, *Base Result* and *Word Result* run on the Commodore PC and are all disk-based and integrating.

LEVEL 9: are previewing the *Worm in Paradise*, the final part of the trilogy which began with *Snowball* and followed up with *Return to Eden*. These will cost £9.95. Also on show is *Red Moon*, Level 9's latest offering.

LLAMASOFT: have *Batalyx* on show, their latest offering for the 64, a mega effort with six games rolled into one.

PRECISION: As well as their usual range, Precision's new material includes *Superscript 128*, a word processor for the 128, and *Superbase 128*, a database, priced at £79.95 and £99.95 respectively. Precision are the people who wrote the official Commodore word processor for the 64 — *Easyscript*. According to them, the new program knocks spots off that. Best of all, *Superscript 128* and *Superbase 128* can be loaded together in memory and used interactively, offering 128 owners a truly integrated business package.

ANIROG: "We are not going to write anything else for the 64," says Anirog boss Anil Gupta. "All our efforts are now centred on the 128." Two games are to be launched in November. Also on the Anirog stand is the excellent *Voicemaster* speech utility (reviewed in Commodore User June).

ADVENTURE INTERNATIONAL: The sequel to *Robin of Sherwood* will be on show here with an arcade follow-up to *Gremlins*. Negotiations are under way for a hot new licensed game and if they come off, the personality will be appearing on the stand. No further details were available at the time of going to press.

CRL: have *Bladerunner*, the licensed game of the spectacularly futuristic Ridley Scott film, based on sci-fi bounty hunters. The game sticks very closely to the film and features the Vangelis soundtrack.

TYNESOFT: will be demonstrating their new cricket title, *Ian Botham's Test Match* (reviewed this month) and a range of new titles for the C16 including a tennis simulation and a game called *Raffles* — a burglary simulation! They also have a C16 starter pack on show which contains four games for £14.95.

ACTIVISION: have all their latest titles on show including the excellent *There Is Someone Living In My Computer, Barry McGuigan World Championship Boxing* and *Hacker*.

MELBOURNE HOUSE: will be showing the highly successful *Exploding Fist* but will have a Tolkeinesque flavour to its stand for a preview of its latest three-part Lord of the Rings adventure.

COMMODORE: All the current line-up including the 128 and Commodore PC, but probably no Amiga, despite the fact that it's just been launched in America.

COMMODORE USER: Come along and see us at the show. There'll be loads of freebies, plus Hot Shots Mike, Hardware Bohdan and Software Eugene. □

This is the one for you

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CU9

SOUNDS

Island Logic's 'The Music System' reviewed

by Fred Reid

Following last month's look at Activision's *Music Studio* we've acquired another new program that's gunning for the title of best music package on the 64. It's Island Logic's *'The Music System'*, which has at long last been adapted from the original BBC version.

Island Logic first designed *The Music System* for the BBC micro. Despite the BBC's many sound limitations (compared to the Commodore 64), the package was an instant success and has become one of the best music programs for the Beeb.

The Commodore 64 version threatens not only to set new musical standards but new standards of presentation, featuring icons, windows and pop-up menus that make your humble 64 look like an Apple Macintosh.

The Music System (we'd better call it TMS for short), is a complete software package designed to interface your musical ideas to your ears with the minimum of fuss and bother. The system is available on cassette, at £15.95, and on disk at £29.95. Both versions will have some form of turbo loader.

TMS is made up of six separate but interactive modules accessed from a central menu page. There's a music editor, a sound editor, a keyboard composer, a printer module, a MIDI composer and a module to link together several short compositions to make a longer performance. Selecting options is generally done by pressing the spacebar.

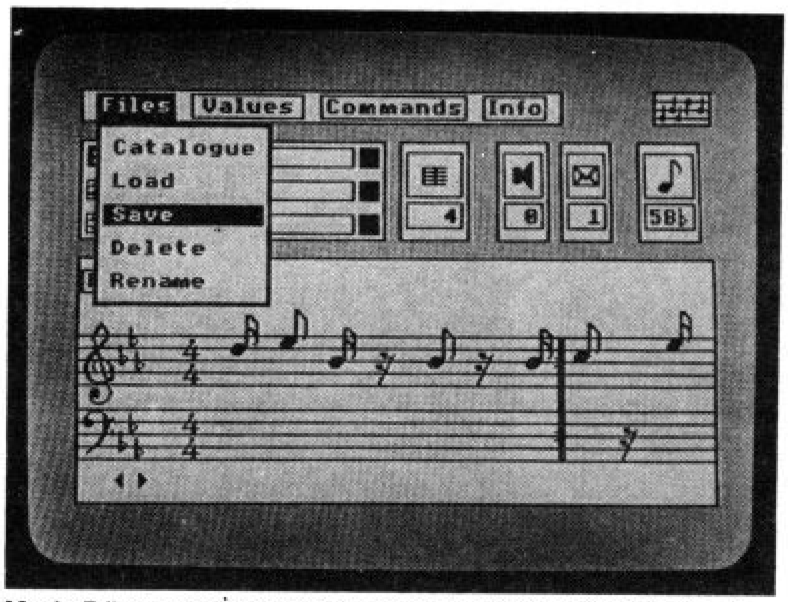
Music out the window

Let's take the Music Editor first. This module is both the beginning and the end of your music files. Notes can be quickly entered on the staves that appear on a window set centre-screen. Directly above this window are the control windows for selecting volume and sound, an indicator that tells you which bar of music is currently in view, an event counter that tells you how many more notes you can enter, and a bar-meter display for each of the three voices.

This bar-meter features three solid bars, one per voice, the position of a fixed vertical line tells you the relative position of the window within your composition, and gives you a rough idea how much space you have left to work with, as well as indicating which voice is currently displayed on the stave, and which voices are selected for playback.

At the top of the screen is a menu selector, that I will describe later as it is constant throughout the modules.

The note that appears within the cursor bar (a white vertical stripe down the centre of the stave that indicates where your editing powers are concentrated) can be moved up or down to the desired position, set as sharp or flat, you can set it's length and implement any number of purely musical functions such as rests, ties, triplets, repeats, etc.



Music Editor module showing pop-up menu from the 'files' option.

When you have the right note in the right place, pressing Return fixes it and scrolls the stave across ready for the next note to be entered or altered. You can only enter notes for one voice at a time, but switching between voices is as easy as a key press, and the cursor bar reappears at the same relative position in the new stave.

Play-time

Playing back your composition is as easy as pressing RUN/STOP, and turning up the volume on your TV. Naturally, you can select any combination of voices for playback, including all three. Pressing Shifted RUN/STOP plays back just the voice currently in view, and you can see the music scroll across the window as it plays.

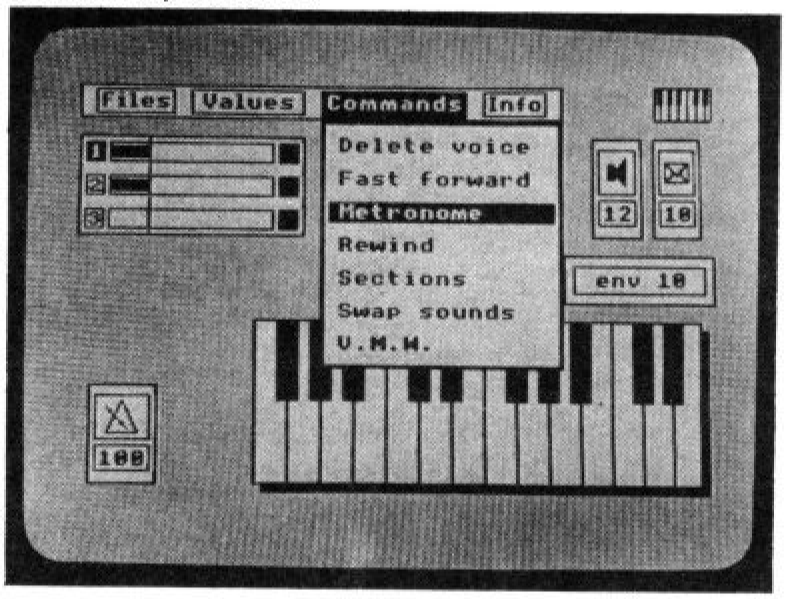
As I said earlier, the top line of the screen contains the indicators for the 'pop up' menus. There are four of these, and when the appropriate function key is pressed, the menu 'pops' into view, temporarily obscuring part of the screen.

The menu indicators read (from left to right) FILES, for all disc operations such as loading and saving, VALUES, for altering the functions relevant to the module you are working in (in the music editor module, some of the things you can alter are key signature, time signature and playback tempo).

The COMMANDS menu offers block editing, macro definitions, plus a whole host of features for the more experienced user. Also from this menu is the exit route back to the module selection screen.

The INFO menu is really only a display giving useful information like how many notes you have used in each voice, sound, volume and tempo settings, key signature etc. This menu gives you all the data relevant to the file and module you are working on.

Keyboard Module: the pictorial on-screen keyboard corresponds to various keys on the 64.



Ebony and ivory

Now you have some music entered into the system, you might want to improvise a little. So you now go back to the main

LOGICAL:

menu and select the Keyboard Module.

In many ways this is similar to the music editor module: notes can be entered, stored and played back in the same way. The difference here is that all note information is input in real-time, and the 64's keyboard is set up to resemble a piano keyboard.

Pressing a key on one of the top two rows plays the note and indicates both the note name and it's position on a picture of a piano keyboard. The top line still offers the menu indicators and the voice barmeters are still there. But to the left of the keyboard picture is a metronome (a visual aid to help you keep time) and a record indicator.

Above the keyboard picture is the octave shift indicator, and above this is a panel that resembles that of a cassette recorder. This natty idea is your fast forward and rewind controls to get you to the right part of your score and playback, record and pause indicators.

This is the module I had most fun playing with, and is probably the best place to gain some quick experience with TMS, as well as a good place to visit if you only have a few minutes to spare.

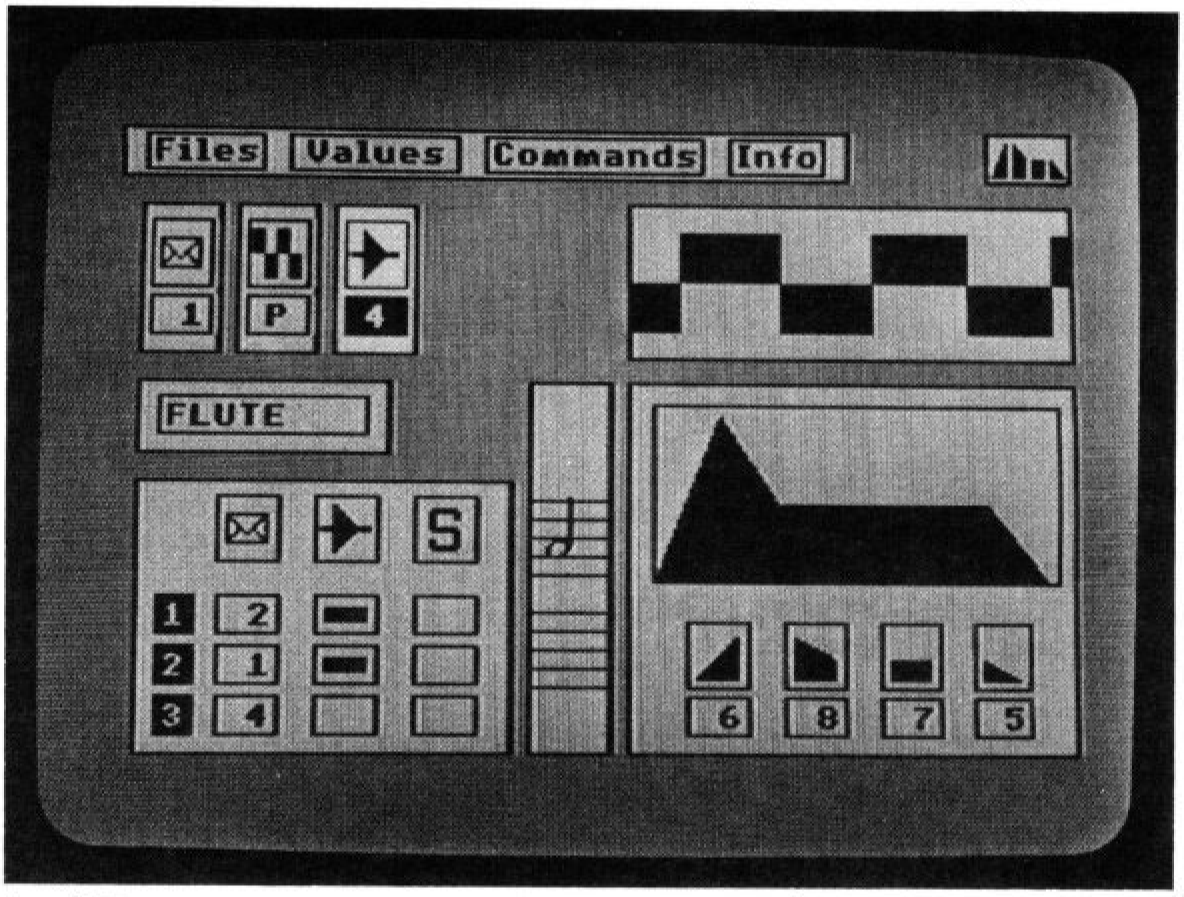
Print your notes

Once you have your music together, you will probably want to print it out onto paper (this is guaranteed to turn your mates green with envy) and this is adequately catered for within the TMS package.

The Printer Module operates in much the same way as the other modules, the menu indicators at the top, full-width music window and bar counter.

An additional clever feature of this media is a lyric window for entering and editing text to be printed out with your music. This window is just above the music window, and the music is automatically spaced out to line up with the text.

Various printers are catered for by TMS, notably Commodore's MPS 801 and MPS 802 printers, Epson's RX-80, FX-80 and MX-80 F/T, and Star's Delta 10. If your printer isn't here, don't assume it will work anyway, try it out in the shop with the software first!



Sound Editor represents the ADSR envelope both in graphic and numeric form.

At a time when MIDI (Musical Instrument Digital Interface) is the word on everybody's lips, I am not surprised to see it featured strongly here. As MIDI is better discussed in depth elsewhere I won't go into detail here.

Suffice to say that TMS allows you to connect up to any MIDI compatible synthesizer and use it's own keyboard to enter notes into the TMS MIDI editor. This, of course, is only half the story as you can play back recorded music using your synthesiser's own sounds.

The MIDI Module allows for up to six tracks (voices) to be recorded and/or played back, and full on-screen editing is available in keeping with the rest of the package.

Links and Envelopes

If you run out of room in the Music Editor, all is not lost. The linker module lets you make a list of all the bits of a long composition (providing they are all stored on disk), and play them back one after the other. There is nothing to stop you stringing together half a dozen of your favourite tunes and listen to them one after the other, as many time as you wish!

Last, by no means least, the Sound Editor. The main attraction of this screen must be what the manual describes as the 'Dynamic Envelope Device'. This window displays both a graphic and numeric representation of the current ADSR (attack, decay, sustain, release) parameters, as you alter the values, the shape of the graph alters to match.

It looks as though TMS has added some extra wave generators to the normal SID specification as some of the things you can do in the way of special effects are normally quite out of the question!

This module incorporates a sequencer so that you can listen to a piece of music while you alter the sounds. This enables you to check that the effect works with the piece of music you intend to use that sound with. You will probably want to experiment with the Sound Editor module, and this appears by far the best way to get to know all its features.

The manual supplied is massive (about 50 pages), and deals in depth with each module in turn using pictures (actual screen dumps from the package) to make its point more clearly. What is missing however, is an index. An essential item I think, considering the complexity of the software, and a point I'm sure will be rectified before TMS hits the shops.

Conclusions

Island Logic has taken so long to develop TMS for the 64 that its competitors have stepped in with very respectable alternatives. But the time spent seems to have been worthwhile. TMS is a complex program, much aided by its pictorial, icon and menu-driven method of operation. The package looks spectacular and the end-results are equally impressive. One more plus point, it won't bust your pocket.

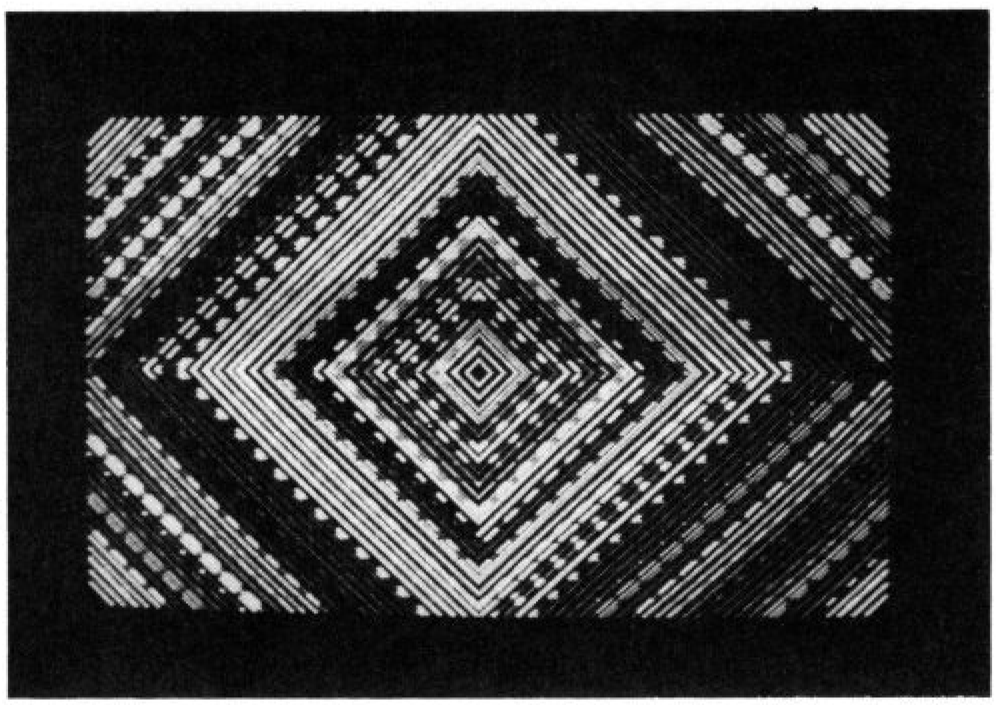
- The Music System c/o Firebird Software 01-379 6755
- Price: £15.95 (cass) *(beginner's version)* £39.95 (disk) *(professional version)*

C-16 GRAPHIC COMPETITION WINNERS

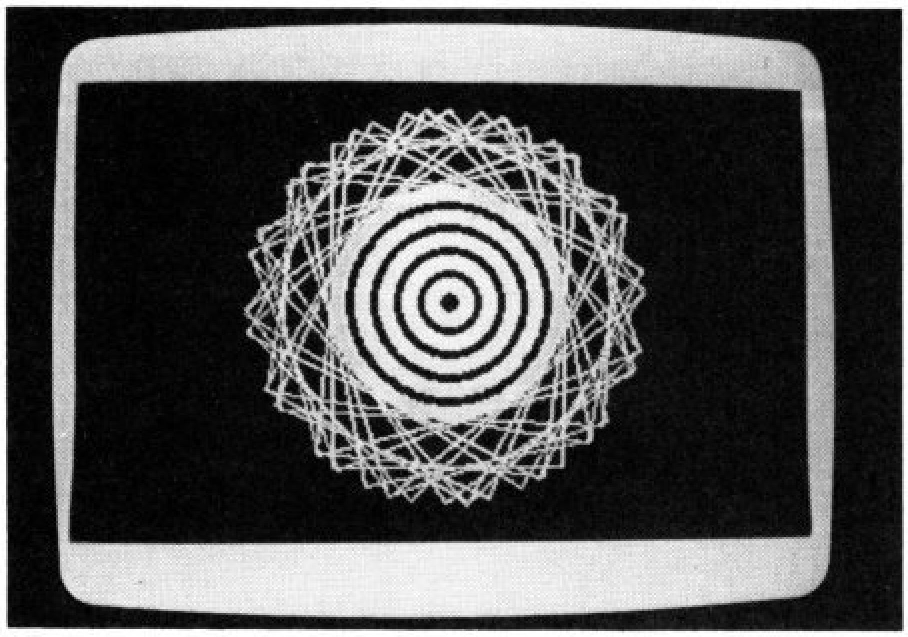
The response to last month's competition was so good and of such a high standard that we've decided to print some of the winning entries. Not necessarily the best, at least they were the most compact. N. Densley gets a special pat on the back for his brilliant 'Commodore User' logo. Favouritism? Never.

G. D. MASON

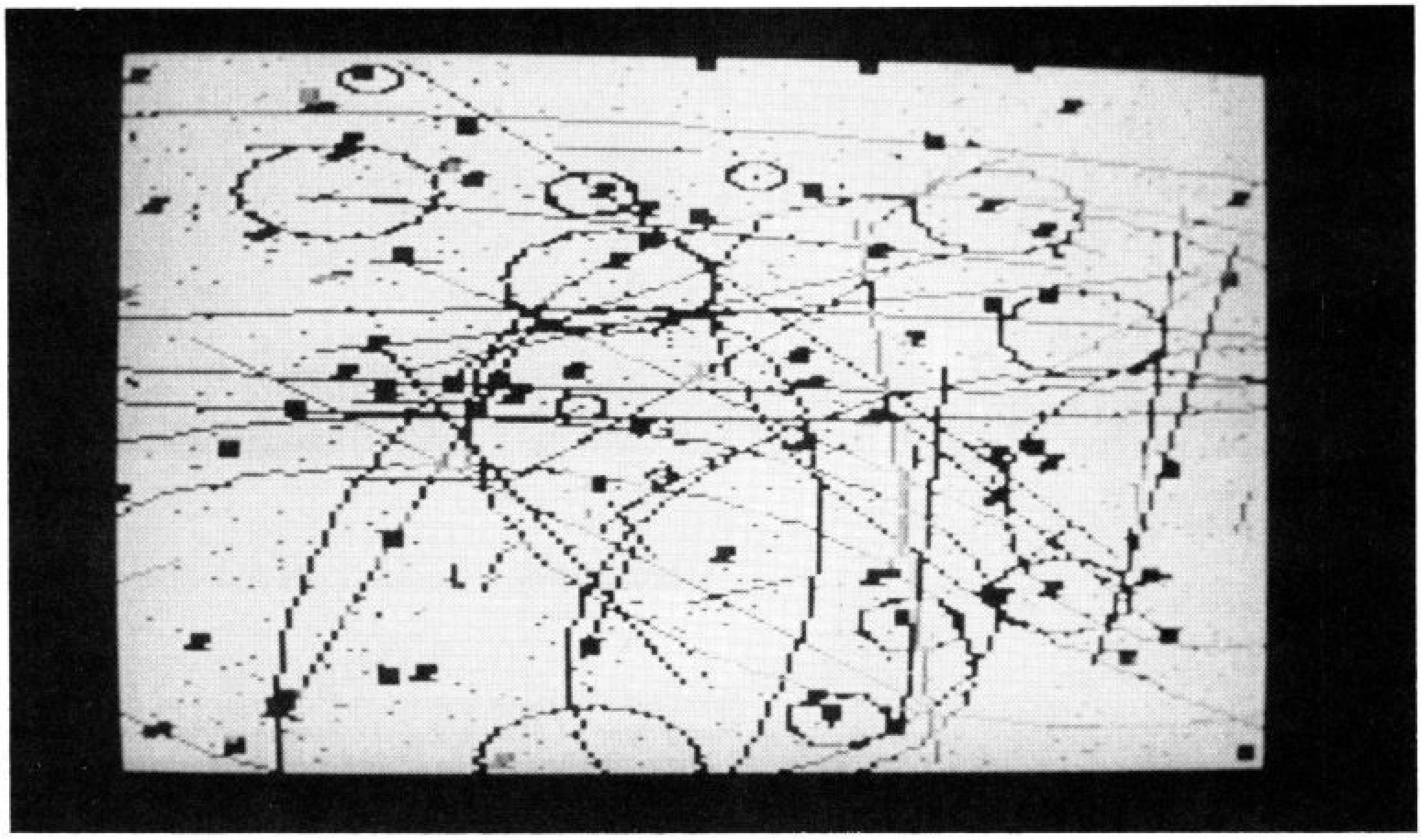
```
10 SCNCLR
20 COLOR0,1:COLOR1,2
70 COLOR4,2+INT(RND(0)*15)
80 GRAPHIC1,1
90 FOR R=5TO50 STEP5
100 CIRCLE,160,100,R
110 NEXTR
120 FORR=7TO50 STEP10
130 COLOR1,2+INT(RND(0)*15)
140 PAINT,160+R,100,1
150 NEXTR
160 A=RND(1)*20+10
170 FORL=0TO359STEPA
180 COLOR1,2+INT(RND(0)*15)
190 BOX1,110,30,210,170,L
200 NEXTL
210 FORL=1TO2500:NEXTL
220 GOTO70
```



K. GREEN



```
1 REM WRITTEN BY K GREEN
2 REM C/16 GRAPHICS
10 COLOR0,1:COLOR4,1
20 GRAPHIC1,1
30 S=INT(RND(1)*10+5)
40 FOR I=5TO250 STEP S
50 C=INT(RND(1)*16+1)
60 D=INT(RND(1)*7+1)
70 COLOR1,C,D
80 CIRCLE1,160,100,I,I,,,,360/4
90 NEXT I
100 GOTO 30
```



JOHN PAYNE

```
20 N=1:A$="A":COLOR0,2,6:COLOR4,15,2
40 GRAPHIC 3,1:DO WHILE A$<>"Q"
60 C=INT(RND(1)*16+1):T=INT(RND(1)*5)
80 X=INT(RND(1)*158+1):Y=INT(RND(1)*198+1)
100 Z=INT(RND(1)*101):W=INT(RND(1)*161)
120 B=C*T:COLOR3,C,T:COLOR1,C,T
140 IF N/4=INT(N/4) THEN S=3:ELSE S=1
150 DRAW S,X,Y
160 IF N/10=INT(N/10) THEN BOX S,X,Y,X+2,Y+4,B,1
170 IF N/14=INT(N/14) THEN CIRCLE S,X,Y,C,B,C,B,B
180 IF N/34=INT(N/34) THEN DRAW S,X,Y TO Z,W
190 IF N/86=INT(N/86) THEN CIRCLE S,X,W,Y,Z,,,B
200 N=N+1:GETA$:
220 LOOP
230 GETKEY A$:GRAPHIC0:COLOR1,1
250 END
```

BYRON GEORGE

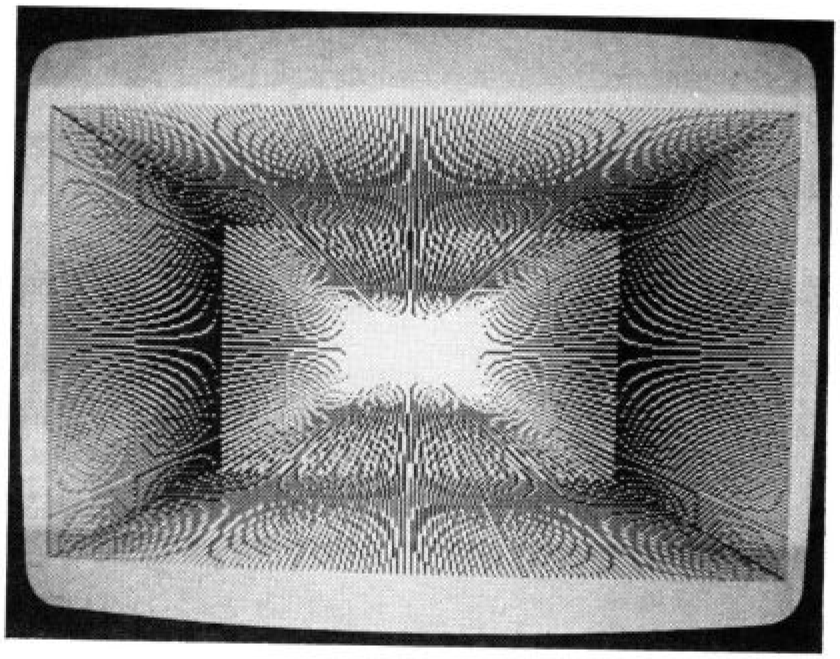
```
0 REM B.GEORGE SOFTWARE (C)1985
10 COLOR0,1:COLOR4,1:GRAPHIC1,1
20 C=INT(RND(1)*15)+2
30 V=INT(RND(0)*50)+100
40 H=INT(RND(0)*50)+100
50 RV=99+(100-V)
60 RH=99+(100-H)
70 COLOR1,C
80 DRAW 1,V,H
90 DRAW 1,V,RH
100 DRAW 1,RV,RH
110 DRAW 1,RV,H
115 GET A$:IF A$=""THEN GOTO 20
120 GRAPHIC0,1:STOP
```

IAN MACFARLANE

```
10 COLOR 0,1
20 COLOR 1,2
30 GRAPHIC1,1
40 FOR A=320 TO 0 STEP-5
50 DRAW 1,160,200 TO A,0
60 NEXT A
70 FOR B=0 TO 320 STEP 5
80 DRAW 1,160,0 TO B,200
90 NEXT B
100 FOR C=0 TO 200 STEP 5
110 DRAW 1,320,100 TO 0,C
120 NEXT C
130 FOR D=200 TO 0 STEP-5
140 DRAW1,0,100 TO 320,D
150 NEXT D
160 GETKEY A$
170 GRAPHIC0,0
```

MIKE BINKS

```
5 REM GRAPHIC DISPLAY BY M.BIRKS
10 SCNCLR
20 COLOR0,1:COLOR1,2
30 GRAPHIC1,1
40 FORG=10 TO 50 STEP 10
50 CIRCLE1,160,100,G,50
60 NEXTG
70 CIRCLE1,160,100,50,20
75 DRAW1,0,150 TO 320,150
80 FORT=0 TO 320 STEP 3
90 DRAW1,160,150 TO T,200
100 NEXTT
```



HERE'S A LIST OF THE FIFTEEN WINNERS

Mike Birks of Harrogate, Ian Macfarlane of Birmingham, John Payne of Sheffield, G.D. Mason of York, K. Green of Durham, Byron George of Selby N. Yorkshire, N. Densley of Bristol, Philip Greenwood of Ilkley, Jonathan Gooing of Mexborough, S. Yorkshire, R. Wilds of Aylesbury, R. McHattie of Aberdeen, Shawn Hanson of Featherstone, W. Yorkshire, Gary Lovatt of Wolverhampton, Andrew Hill of Hull and Dean Chick of Catford, London — copies of "100 Programs for the Commodore 16" are winging their way to you all.

HOW TO USE EASY ENTER

EASY ENTER

COLOUR CODES

[BLK]	– press CTRL and 1
[WHT]	– press CTRL and 2
[RED]	– press CTRL and 3
[CYN]	– press CTRL and 4
[PUR]	– press CTRL and 5
[GRN]	– press CTRL and 6
[BLU]	– press CTRL and 7
[YEL]	– press CTRL and 8

[ORG]	– press CBM key and 1
[BRN]	– press CBM key and 2
[L RED]	– press CBM key and 3
[GR1]	– press CBM key and 4
[GR2]	– press CBM key and 5
[L GRN]	– press CBM key and 6
[L BLU]	– press CBM key and 7
[GR3]	– press CBM key and 8

COMMODORE GRAPHIC CHARACTERS

PRINT WHITE
CURSOR DOWN
REVERSE FIELD ON
HOME
PRINT RED
CURSOR RIGHT
PRINT GREEN
PRINT BLUE
FUNCTION KEY F1
FUNCTION KEY F3
FUNCTION KEY F5
FUNCTION KEY F7

FUNCTION KEY F2
FUNCTION KEY F4
FUNCTION KEY F6
FUNCTION KEY F8
PRINT BLACK
CURSOR UP
REVERSE FIELD OFF
CLEAR
INSERT
PRINT PURPLE
CURSOR LEFT
PRINT YELLOW
PRINT CYAN

OTHER CODES

[CU]	– press 'cursor up' key
[CD]	– press 'cursor down' key
[CL]	– press 'cursor left' key
[CR]	– press 'cursor right' key
[HOM]	– press HOME key
[CLS]	– press CLEAR key
[DEF]	– press INST key (insert)
[REV]	– press RVS ON key (CTRL and 9)
[OFF]	– press RVS OFF key (CTRL and 0)
[SPC]	– press spacebar
[G<key]	– press CBM key with specified key
[G>key]	– press SHIFT key with specified key

EXAMPLES:

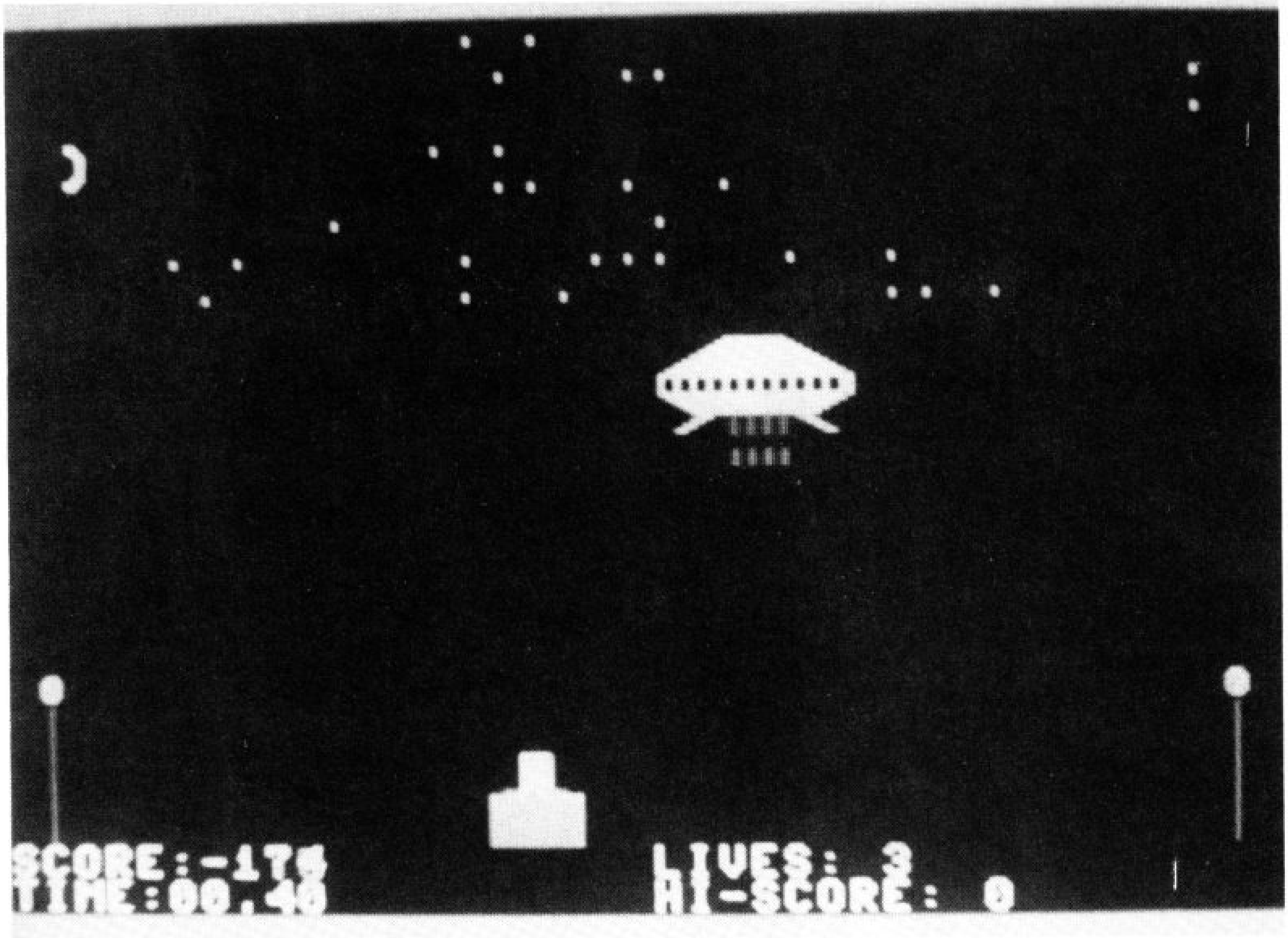
[3SPC]	– press spacebar three times
[5CD]	– press 'cursor down' key five times
[G>F]	– press SHIFT key with 'F'

NITESPRITES – for the Commodore 64

by Derrick Reid

Destruction fans get ready. Your task is to destroy as many spaceships as you can in the shortest possible time. Your score gradually decreases if you don't manage any hits. Three levels of difficulty, sound and good crash sequence make this a nifty piece of programming. Full instructions appear on screen.

```
1 REM**NITE-SPRITES BY DERRICK REID**
2 FORS0=12288TO12350:READQ1:POKES0,Q1:NEXT
3 FORS1=12352TO12414:READQ2:POKES1,Q2:NEXT
4 FORS2=12416TO12478:READQ3:POKES2,Q3:NEXT
5 PRINT"[CLS]":POKE53280,0:POKE53281,2
6 PRINTSPC(14)"[CD][BLK]NITE-SPRITES"
7 PRINT"[CD][3CR]YOUR MISSION IS TO DESTROY AS MANY[4SPC]ALIEN SHIPS AS POSSIBLE
 IN";
8 PRINT" THE SHORTEST TIME, AVOIDING THE DEADLY MISSILES AND[2SPC]COLLECTING A";
9 PRINT" HIGH SCORE."
10 PRINTSPC(16)"[CD][YEL]CONTROLS"
11 PRINT"[CD][3CR]>[BLK] MOVES THE GUNPORT RIGHT."
12 PRINT"[3CR][YEL]<[BLK] MOVES THE GUNPORT LEFT."
13 PRINT"[3CR][YEL]SPACE-BAR[BLK] RELEASES THE MISSILES."
14 PRINT"[2CD]";TAB(11)"SKILL-LEVEL SELECT"
15 PRINT"[2CD][3CR] CHOOSE LEVEL [YEL]1,2 OR 3[BLK]"
16 INPUTSL:IFSL>3ORSL<1THEN16
17 GOSUB44
18 M=54272:FORZ=MTOM+24:POKEM,0:NEXT:POKEM+24,15:V=53248:POKEV+21,3
19 POKE2040,192:POKE2041,193:POKE2042,194:POKE2043,194:POKEV+29,10:POKEV+39,6
20 POKEV+40,10:POKEV+41,2:POKEV+42,6:POKEV+28,1:POKEV+37,1:POKEV+38,5:L=3
21 X=144:Y=213:J=0:LN=20:TI$="000000"
22 PRINT"[WHT]SCORE:"STAB(20)"LIVES:"L
23 PRINT"TIME:"MID$(TI$,3,2)"."MID$(TI$,5,2),"HI-SCORE:"HS;
24 AA=PEEK(197):IFAA=44THENX=X+18
25 IFAA=47THENX=X-18
26 IFAA=60THENPOKEV+5,Y:J=0:POKEV+21,PEEK(V+21)OR4:POKEV+4,BX
27 IFX<36THENX=36
28 IFX>303THENX=303
29 IFZZ<50THENPOKEV+21,PEEK(V+21)AND251:J=0
30 AX=INT(X/256):BX=X-AX*256:ZZ=Y+J:Y3=Y2+DX
31 IFAX<1THENPOKEV+16,PEEK(V+16)AND250
32 IFAX=1THENPOKEV+16,PEEK(V+16)OR5
33 POKEV,BX:POKEV+1,Y:POKEV+5,ZZ
34 IFY3<235THEN39
35 POKEV+21,PEEK(V+21)OR8:POKEV+7,Y2:DX=0
36 X2=INT(RND(1)*275)+24:Y2=INT(RND(1)*141)+50:RX=INT(X2/256):LX=X2-RX*256
37 IFRX=1THENPOKEV+16,PEEK(V+16)OR10
38 IFRX<1THENPOKEV+16,PEEK(V+16)AND245
39 POKEV+2,LX:POKEV+6,LX:POKEV+3,Y2:POKEV+7,Y3
40 AB=PEEK(V+30)
41 IFAB=6THENPOKEV+5,Y:S=S+1000:GOSUB84
42 IFAB=9THENPOKEV+7,Y2:GOSUB79
43 PRINT"[2CU]":J=J-40:S=S-1:DX=DX+SL*6:GOTO22
44 PRINT"[CLS]":POKE53280,6:POKE53281,0
46 FORT=1TO32:X=INT(RND(1)*319)+1024:Y=55296+(X-1024):POKEY,7:POKEX,46:NEXT
48 PRINT"[2CD][2CR][WHT][G>I][CD][CL][G>K][14CD]"
49 PRINT"[CR][CU][YEL][G>Q][CD][CL][GR1][G>B][CD][CL][G>B][CD][CL][G>B][CD][CL][
G>B]"
50 PRINTSPC(37)"[5CU][YEL][G>Q][CD][CL][GR1][G>B][CD][CL][G>B][CD][CL][G>B][CD][
CL][G>B]"
51 RETURN
52 DATA0,85,0,0,85,0,0,85,0,0,85,0,0,85,0,0,85,0,0,85,0,0,85,0,10,70,160
55 DATA255,255,255,255,255,255,255,255,255,255,255,255,255,255,255,255,255
58 DATA255,255,255,255,255,255,255,255,255,255,255,255,255,255,255,255,255,255
61 DATA0,255,0,1,255,128,3,255,192,7,255,224,15,255,240,31,255,248,63,255,252
```




```
64 DATA127,255,254,255,255,255,170,170,171,170,170,171,170,170,171,255,255,255
67 DATA127,255,254,63,255,252,31,255,248,15,255,240,6,0,96,12,0,48,24,0,24
70 DATA48,0,12,0,85,0,0,85,0,0,85,0,0,85,0,0,0,0,0,0,0,0,0,0,0,0,0,0
72 DATA0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
79 POKE53280,2:FORA=0TO255STEP10
80 POKEM+5,26:POKEM+6,32:POKEM+1,A:POKEM,A:POKEM+4,33
81 FORB=0TO3:POKE53281,B:NEXTB,A:POKEM+4,32
82 L=L-1:IFL<1THENGOSUB87
83 POKE53280,6:POKE53281,0:RETURN
84 POKEM+5,9:POKEM+1,130:POKEM+15,30
85 FORT1=1TO20:POKEV+40,2:POKEM+4,21:FORT=1TO25:NEXT
86 POKEM+4,20:POKEV+40,0:NEXTT1:POKEV+40,10:RETURN
87 PRINT"[CLS][RED]":POKEV+21,0:FORB1=1024TO2023:POKEB1,81:NEXT:A=55296+(B1-1024
)
89 POKEA,7
90 PRINT"YOU HAVE LOST ALL THREE LIVES!!!
91 PRINT"[CD]WOULD YOU LIKE ANOTHER TRY? [Y/N]"
92 GETAN$:IFAN$=""THEN92
93 IFAN$="N"THENEND
94 IFS>HSTHENHS=S
95 IFAN$="Y"THENS=0:GOTO5
96 GOTO92
```

EASY ENTER

SEE PAGE 45

Dam Defender – for the unexpanded Vic 20

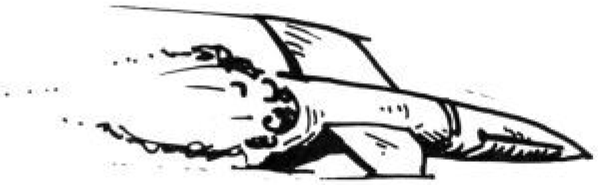
by Clifford Hobby

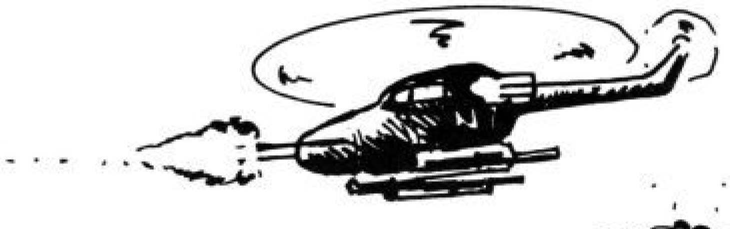
They're firing missiles to breach the dam. Two shots in the same place and the city's in deep trouble. You're job, and you'd better take it, is to fly overhead in your helicopter, intercepting the missiles before they wreak havoc and engulf the city in a watery doom.

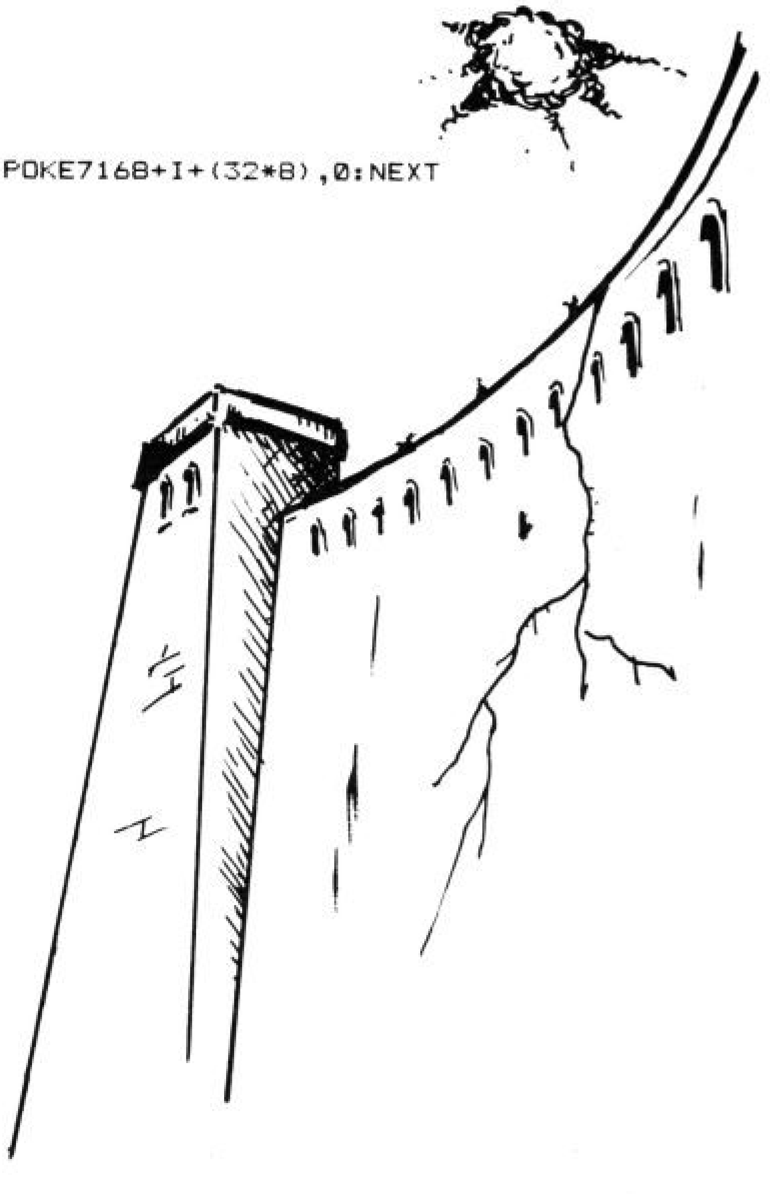
How will you accomplish your mission? Er, just press the spacebar — once to stop the missile and again to release your bomb.

Key in and save Program One. Then key in and save Program Two directly after it on the tape. Rewind and load in the normal way. Run Program One and Program Two will load automatically.

PROGRAM ONE







```
0 X=8:POKE36879,8:PRINT"[CLS][WHT]":FORI=0TO7:POKE7168+I+(32*8),0:NEXT
1 FORI=8TO215:READA
2 POKE7168+I,A:NEXTI
5 GOTO300
10 DATA0,124,198,130,254,130,130,198
20 DATA0,252,198,130,252,130,198,252
30 DATA0,124,194,134,128,128,194,124
40 DATA0,252,198,130,130,130,198,252
50 DATA0,254,194,128,240,128,194,254
60 DATA0,254,194,'128,240,128,128,192
70 DATA0,124,198,128,128,134,194,124
80 DATA0,198,130,130,254,130,130,198
90 DATA0,124,84,16,16,16,84,124
100 DATA0,126,76,8,8,8,72,48
110 DATA0,128,136,144,224,160,144,204
120 DATA0,128,128,128,128,128,196,252
130 DATA0,130,198,254,186,146,130,198
140 DATA0,134,194,226,178,154,142,198
150 DATA0,124,198,130,130,130,198,124
160 DATA0,248,204,132,248,128,128,192
170 DATA0,124,198,130,146,138,198,126
180 DATA0,248,204,132,248,160,144,204
190 DATA0,254,198,128,254,2,198,254
200 DATA0,254,146,16,16,16,16,16
210 DATA0,198,130,130,130,130,198,124
220 DATA0,198,130,130,198,68,40,16
230 DATA0,198,130,130,146,146,214,108
240 DATA0,198,68,40,16,40,68,198
250 DATA0,198,130,68,56,8,16,16
260 DATA0,254,132,8,16,32,66,254
270 DATA0,238,136,232,40,238,0,0
271 DATA0,238,170,174,172,234,0,0
272 DATA0.224.132.192.132,224,0,0
```

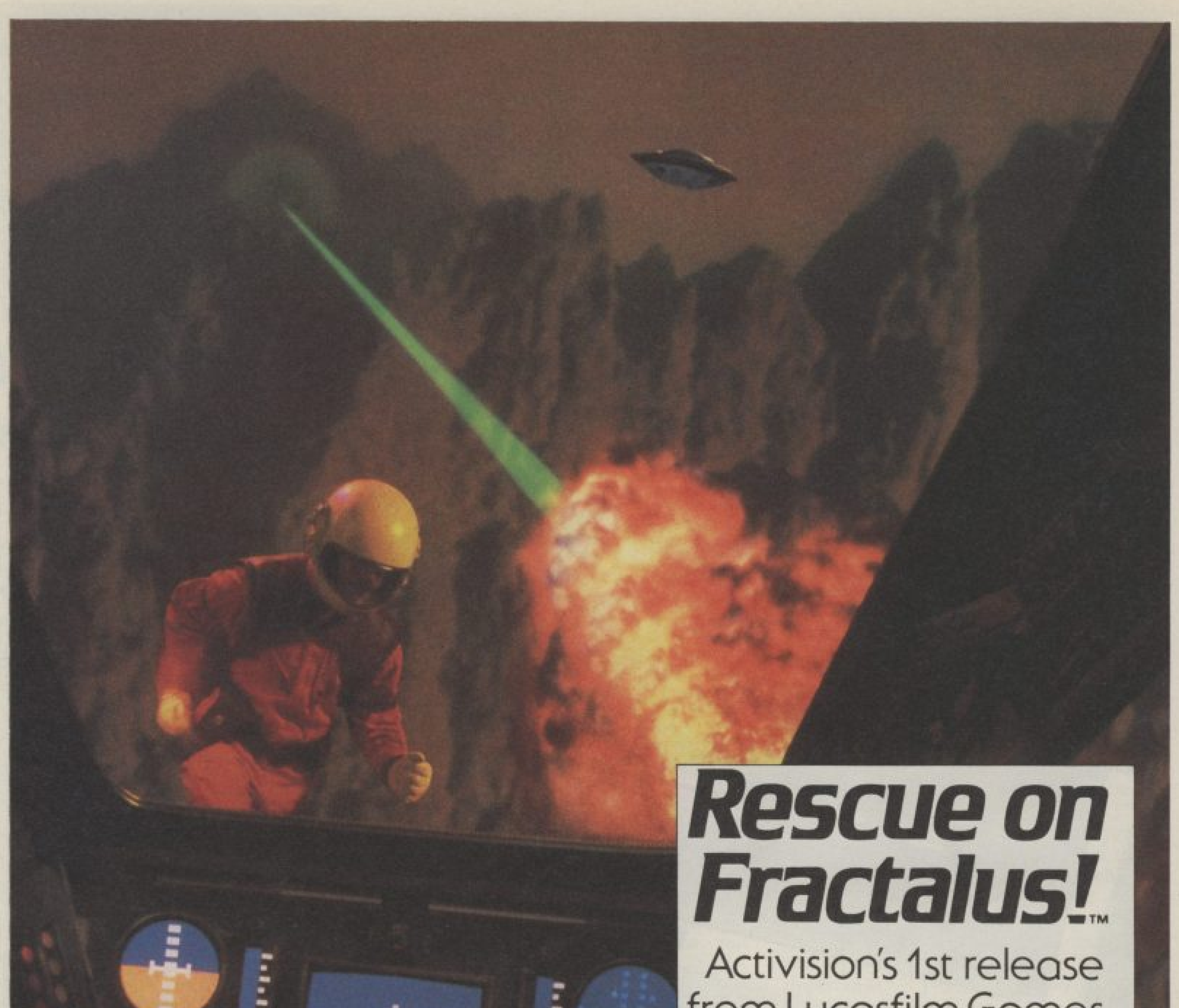
```
273 DATA0,174,164,228,164,174,0,0
274 DATA0,223,223,223,0,127,127,127
275 DATA127,73,73,127,127,73,73,127
276 DATA255,85,170,85,170,85,170,85
277 DATA31,60,96,192,96,60,31,0
278 DATA15,192,227,255,3,1,0,31
279 DATA248,128,224,176,152,248,146,252
280 DATA60,24,60,60,60,60,24,0
300 FORI=0TO31:READA:POKE7168+I+(37*8),A:NEXT
301 FORI=0TO7:READA:POKE7168+I,A:NEXT
302 FORI=0TO7:POKE7168+I+(27*8),255:POKE7168+I+(32*8),0:NEXT
303 FORI=0TO23:READA:POKE7168+(28*8)+I,A:NEXT
304 FORI=0TO15:READA:POKE7168+I+(33*8),A:NEXT
305 FORI=0TO7:READA:POKE7168+I+(36*8),A:NEXT
450 POKE36869,255:POKE36879,110:POKE56,26
500 PRINT"[CLS][WHT][5SPC]DAM DEFENDER
501 PRINT"[CD][BLK][6SPC]WRITTEN BY
502 PRINT"[WHT][CD][4SPC]CLIFFORD HOBBY
503 PRINT"[CD][BLK][2SPC]FOR THE UNEXPANDED
504 PRINT"[WHT][CD][5SPC]VIC COMPUTER
505 PRINT"[BLU][CU]";:POKE198,1:POKE631,131:END
```

EASY ENTER

SEE PAGE 45

PROGRAM TWO

```
0 POKE36879,110:PRINT"[CLS][WHT]":POKE36878,15:POKE36869,255
1 PRINT"[5SPC]DAM DEFENDER
2 PRINT"[CD][2SPC]WRITTEN BY C[REV].[OFF]HOBBY
3 PRINT"[YEL][2CD] USE THE SPACE BAR TO[2SPC][CD]LANCH YOUR CRAFT AND[2SPC][CD]
TO DROP YOUR BOMB[REV]."
4 PRINT"[OFF][WHT][2CD][3SPC]PLEASE PUSH [REV]'[OFF]F[REV]1'[HOM]"
5 POKE198,0:WAIT198,1:IFPEEK(631)<>133THEN5
6 PRINT"[CLS][3CD]";:FORI=0TO18:PRINT"[BLU][[[[[":NEXT:PRINT"[GRN]]]]]][HOM]"
7 POKE198,0:POKE36879,8:FORI=2TO21:POKE7680+(I*22)+5,0:POKE7681+(I*22)+5,0
8 POKE38400+(I*22)+5,3:POKE38401+(I*22)+5,3:NEXT
9 FORI=0TO14:POKE7680+483-I,28:POKE7680+461-I,28:POKE38400+461-I,2:POKE38400+483
-I,2
10 NEXT:PRINT"[HOM][19CD]"TAB(8)"[RED]\\\\[5SPC]\ \\\[HOM]"
11 FORI=0TO16:POKE7680+505-I,29:POKE38400+505-I,5:NEXT
12 SC=0:TI$="000000"
13 X=INT(RND(1)*16)+3:X=X*22:AG=0
14 POKE7701+X,32:IFHT=1THENHT=0:GOTO13
15 POKE7700+X,30
16 IF PEEK(198)=1ANDPEEK(631)=32THEN100
17 X=X-1:IFPEEK(7700+X)=0THENPOKE7700,32:GOTO30
18 POKE36875,200:FORDE=1TO30:NEXT:POKE36875,0:GOTO14
30 POKE7700+X,32:POKE36877,230:FORDE=1TO30:NEXT:POKE36877,0:POKE36875,0:POKE7701
+X,32
31 IF PEEK(7700+X-1)=27THEN200
32 GOTO13
100 Y=1:POKE36877,0:POKE36875,0:POKE198,0
101 POKE7680+Y,33:POKE7681+Y,34:POKE36876,200
102 IF PEEK(198)=1ANDY>6ANDPEEK(631)=32ANDAG<>1THENAG=1:POKE198,0:GOTO150
104 POKE7680+Y,32:Y=Y+1:IFY=21THENPOKE7680+Y,32:POKE36876,0:POKE198,0:GOTO14
105 POKE36876,0:FORDE=1TO10:NEXT:GOTO101
150 POKE36876,0
151 B=Y+22:POKE7680+B,36
152 B=B+22:IFPEEK(7680+B)<>32ANDPEEK(7680+B)<>30THENPOKE7680+B-22,32:POKE36876,0
:GOTO101
153 IF PEEK(7680+B)=30THENSC=SC+1:POKE7700+X,32:POKE7680+B,32:POKE36877,200:GOTO
160
155 POKE36876,230-B/5:FORDE=1TO30:NEXT:POKE7680+B-22,32:POKE7680+B,36:GOTO152
160 POKE7701+X,32:FORDE=1TO50:NEXT:POKE36877,0:POKE7680+B,32:POKE7680-22+B,32
161 HT=1:GOTO101
200 POKE36875,0:POKE36877,230
201 FOR I=22TO490-X:IFPEEK(7680+505-I)=0THENNEXT
202 POKE38400+505-I,6:POKE7680+505-I,27:NEXT
203 POKE36877,0:PRINT"[HOM][WHT][2SPC]%&'[REV][YEL]"SC:IFSC>HITHENHI=SC
204 PRINT"[WHT][OFF][HOM][CD][9CL](%&'[REV][YEL]"HI
205 POKE198,0:FORI=0TO6000:NEXT:GOTO0
```


AH
A
LR
E
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THE FORCE IN DISTRIBUTION

GET INTO SHAPE

Define your own characters on the C-16 and Plus/4

by John Ransley

The graphics programmer's best friend is probably the sprite, which make the C-16 and Plus/4 a little unsociable. They don't have any. But you can get around the problem by designing your own characters.

Bet you've almost given up trying to create brilliant graphic screens on your C16 (or Plus/4). Don't blame you. The SSHAPE and GSHAPE commands may be okay for some applications, but they're a painfully slow way of building up a whole sheet of detailed graphics.

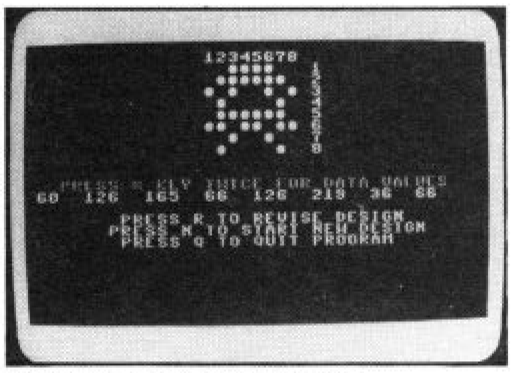
And that's the good news. The bad news is that neither the C16 nor the Plus/4 has sprites.

Customised characters

Pity, because it's only when you've delved into the fascinating world of customised character design that you can really begin to make the most of your Commodore's potential. And that goes whether you merely want to give a unique look to your utility programs by recasting the standard typeface or have designs on seizing the throne held by Tony Crowther, who is such a fan of UDCs that he even used them in preference to sprites on the Commodore 64 for *Loco* and *Suicide Express*.

Take a look at your keyboard and remind yourself that it can access up to 128 different characters and symbols — and the same number again in reverse mode (the characters you get after holding down CTRL and tapping the RVS ON key).

The intelligence for making the right character appear in response to any particular keystroke, and for giving it the appearance it has, is locked into ROM — so you can't tamper with it there. What you can do, though, is to change the signpost so that the processor trundles off to another part of memory to fetch its letters. And that can be a portion of RAM filled with whatever character designs you choose. Clever, eh?



Design your own Space Shuttle.

Pieces of eight

To create a character, you'll need a set of eight values to Poke into RAM. Here's how you produce them. Take a look at **Figure One** and you'll see the way in which the capital letter R — in common with every other character — is based on a grid that is eight cells square. The cells in the leftmost vertical column each have a value of 128, and this value halves, column by column, until it finally makes only 1.

Now if you add up each row from left to right, but counting only bit values for those squares which are filled in, you'll arrive at a total bit value for each row — 8 in all. (Don't despair if all this sounds horribly complicated — the **Designer Program** will do all these calculations for you.)

Figure Two shows something a little more interesting — an alien spacecraft of the kind that's descended from the skies of a million arcade machines. Working on the same principle as before, this design will produce the eight values 60, 126, 66, 255, 102, 60, 66, 195.

On the big screen

Now to get it on screen. First, you'll need to reserve a chunk of memory to hold your new character set and protect it from being overwritten by the rest of your Basic program. The last 1K of RAM starts at memory address 14336, and with just a couple of Pokes you can lower the ceiling of RAM so that anything stored at 14336 and above is safe from corruption. So the first line of any program using UDCs must be:

```
100 POKE 52,56: POKE 56,56
```

The rest can follow other program lines. That way, you have the convenience of using the built-in character set (for a title screen and instruction sheets, for example), which is lost the moment you switch to UDC mode. So let's imagine that's been done and it's time to switch faces:

```
1000 POKE 65298, (PEEK(65298)
     AND 251) OR 8
1010 POKE 65299, (PEEK(65299)
     AND 3) OR 56
1020 FOR C = 3072 TO 3072 + 999
1030 POKE C,1
1040 NEXT C
1050 FOR M = 14336 TO 14336 + 7
1060 READ D
1070 POKE M,D
1080 NEXT M
1090 CHAR ,18,12 "@@@@@"
1100 END
1110 DATA 060, 126, 066, 255, 102,
     60, 66, 195
```

Here, **lines 1000** and **1010** change the signpost, **1020-1040** clear the screen of garbage, and **1050-1080** pick up the eight data values for the new character and Poke them into the first eight bytes of protected RAM.

Check out pages 176 and 177 of your C16's *User Manual* and you'll see, in the columns headed Set 1, the order in which your keyboard expects to find the characters stored in memory. So because you've ducked your spacecraft in the very first eight bytes usually occupied by the ampersand ("&") that's the key you'll need to hit to retrieve it. If you'd wanted instead to store it in place of the £ sign, line 1050 would need to read:

```
1050 FOR M = 14580 TO 14580 + 7
```

But as it is, **line 1090** will punch up a row of aliens at the centre of the screen.

There is, of course, an easier way of working out where M begins. You can make your C16 do this calculation in direct mode or in the program itself:

```
1050 SM = 14336
1055 FOR M = SM + (28*8) TO M + 7
```

The first figure in brackets is the character number; the '£' sign comes twenty-eighth in the list of pages 176-177 of the *User Guide*.

Of course, once you've arrived at all the data values for several different new characters, you can Poke them into memory all in one go rather than one by one.

Space-age letters

Program One creates a futuristic, OCR-type alphanumeric set. The only new thing here is that the letters of the alphabet and the numerals are loaded separately, as they don't follow sequentially in the character table. You'll find this typeface especially suitable for on-screen prompts and scores in space-age games — but armed with the latest Letraset catalogue, you pro-

bably can't wait to chisel out an electronic face or two for yourself.

That lot is complemented by **Program Two**, a machine utility which helps you easily design and calculate the data values for your own user-defined characters, whether they be the letters of a new alphabet or tiny graphic elements in a game design.

When you Run this program, you'll be presented with a monster UDC grid numbered 1 to 8 across its top edge and down the right-hand side. You use these as co-ordinates to select those cells you want filled to form your character, using the keys numbered 1 to 8 on the top row of the keyboard.

So, for example, if you want to fill the top right-hand cell, touch key 1 and then key 8. A blob will now fill that space to confirm your instruction. If you want to erase a cell, simply touch the minus ("–") key and then enter the co-ordinates of the cell you want to 'unfill'.

When you're reasonably happy with your design, touch the multiplication symbol ("**") *twice* and almost immediately the grid will wipe to give you a clearer magnified view of the new character — and the correct data values will be printed to the screen for you to copy down.

If you decide at this point that you'd like to revise your efforts, touch R. Add or remove co-ordinates, touch the star key again, and the new data values will be printed out. To start a fresh design, hit the N key — but be sure you copy down the data values of any finished UDC before you do! There are screen prompts to help you get through all this.

After a little time spent with your UDC designer, you'll find it fun and easy to create a whole library of interesting graphics, alphabets and other elements. Why not get to work right now and make Crowther quiver!

Program One

```
100 REM COMPUTER FOUNT DEMO
110 REM PROTECT MEMORY
120 POKE 52,56:POKE 56,56
130 REM CHANGE SIGNPOSTS
140 POKE 65298,(PEEK(65298)AND 251)OR 8
150 POKE 65299,(PEEK(65299)AND 3)OR 56
160 REM LOAD ALPHABET DATA
170 FOR M=14344 TO 14344+207
180 READ D:POKE M,D
190 NEXT M
200 REM LOAD NUMERALS DATA
210 FOR M=14728 TO 14728+79
220 READ D:POKE M,D
230 NEXT
240 REM CREATE BLANK SPACE
250 FOR BS=14592 TO 14592+7
260 POKE BS,0:NEXT BS
270 REM CREATE DEMO SCREEN
280 SCNCLR
290 CHAR ,8,12,"ABCDEFGHIJKLMNOPQRSTUVWXZ"
300 CHAR ,15,14,"123456789"
310 GETKEY A$
320 REM
330 REM DATA VALUES
340 REM
350 DATA 126,66,66,126,98,98,98,0
360 DATA 124,68,68,126,98,98,126,0
370 DATA 126,66,66,96,98,98,126,0
380 DATA 126,66,66,98,98,98,126,0
390 DATA 126,64,64,124,96,96,126,0
400 DATA 126,64,64,124,96,96,96,0
410 DATA 126,66,64,102,98,98,126,0
420 DATA 66,66,66,126,98,98,98,0
430 DATA 16,16,16,24,24,24,24,0
440 DATA 2,2,2,6,70,70,126,0
450 DATA 66,66,66,124,98,98,98,0
460 DATA 64,64,64,96,96,96,126,0
470 DATA 126,74,74,106,106,106,106,0
480 DATA 98,82,74,70,98,98,98,0
490 DATA 126,66,66,70,70,70,126,0
500 DATA 126,66,66,126,96,96,96,0
510 DATA 126,66,66,106,106,126,8,0
520 DATA 124,68,68,126,98,98,98,0
530 DATA 126,98,96,126,2,66,126,0
540 DATA 126,16,16,24,24,24,24,0
550 DATA 66,66,66,98,98,98,126,0
560 DATA 66,66,66,102,36,24,24,0
570 DATA 74,74,74,106,106,126,126,0
580 DATA 66,66,126,24,126,66,66,0
590 DATA 66,66,66,126,24,24,24,0
600 DATA 126,66,68,8,18,34,126,0
610 DATA 8,8,8,24,24,24,24,0
620 DATA 126,2,2,126,96,96,126,0
630 DATA 126,2,2,62,6,6,126,0
640 DATA 64,68,68,126,12,12,12,0
650 DATA 126,64,64,126,6,6,126,0
660 DATA 64,64,64,126,98,98,126,0
670 DATA 126,66,66,6,6,6,6,0
680 DATA 126,66,66,126,98,98,126,0
690 DATA 126,70,70,126,2,2,2,0
700 DATA 126,70,74,82,102,70,126,0
```

Figure One

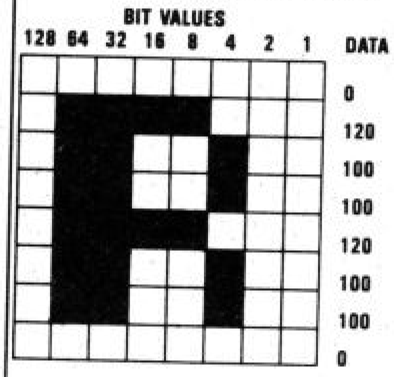
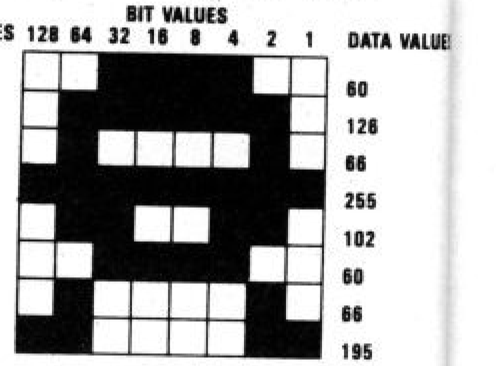


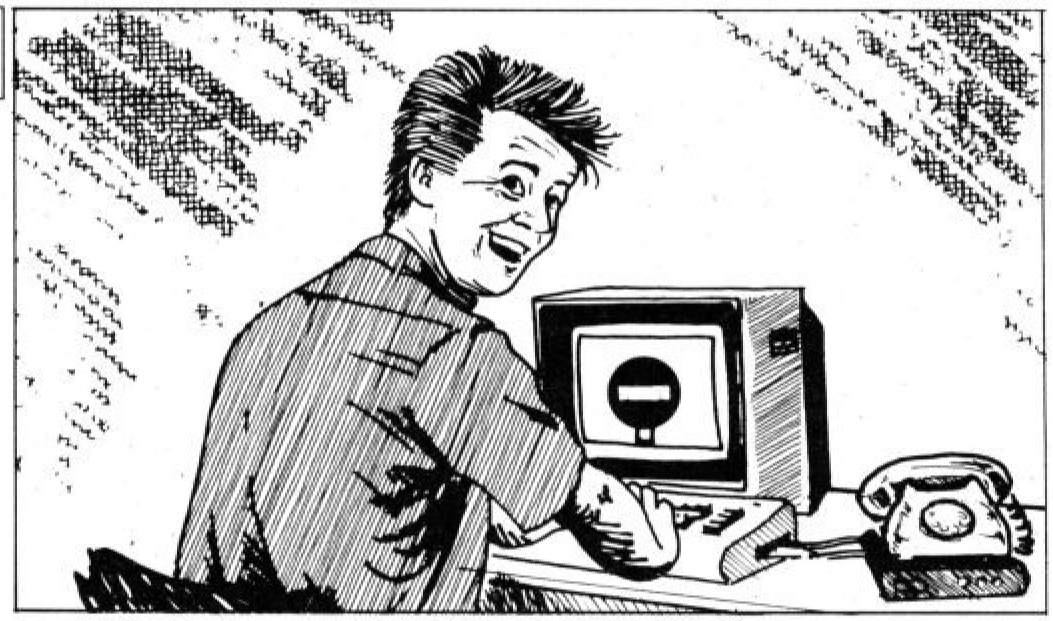
Figure Two



Program Two

```
1000 REM C16 UDC DESIGNER
1010 CH=81:CHAR 4,4,7:CHAR 0,1,7
1015 SCNCLR:PRINT CHR$(5)
1030 REM PRINT DESIGN GRID
1040 PRINT CHR$(147)CHR$(17)TAB(15)"12345678"
1050 FOR L=1 TO 8
1060 PRINT TAB(15)"........"L:NEXT
1070 PRINT CHR$(19)TAB(240)TAB(243)CHR$(150);
1075 PRINT "PRESS * KEY TWICE FOR DATA VALUES"
1080 REM ACCEPT COORDINATE INPUTS
1090 GETKEY A$
1100 IF A$="*" THEN 1240
1110 IF A$="-" THEN CH=46:GOTO 1090
1120 GETKEY B$
1130 REM TEST THAT INPUTS ARE NUMBERS
1140 A=VAL(A$):B=VAL(B$)
1150 IF A=0 OR B=0 THEN 1090
1160 REM FILL GRID ACCORDINGLY
1170 A=A-1:B=B-1
1180 IF A=8 OR B=8 THEN 1090
1190 C=B*40
1200 C=3167+A+C
1210 POKE C,CH
1220 CH=81:GOTO 1090
1230 REM CALCULATE DATA VALUES
1240 FOR V=3166 TO 3466 STEP 40
1250 FOR L=1 TO 8
1260 IF PEEK(V+L)<>81 THEN POKE V+L,32:GOTO 1300
1270 READ A,B
1280 IF A=L THEN X=X+B:RESTORE:GOTO 1300
1290 GOTO 1270
1300 NEXT L
1310 PRINT CHR$(5)X;:D=D+1:X(D)=X:X=0:NEXT
1320 REM OFFER USER  OPTIONS
1330 PRINT
1340 PRINT
1350 PRINT CHR$(158);TAB(8)"PRESS R TO REVISE DESIGN"
1360 PRINT TAB(7)"PRESS N TO START NEW DESIGN"
1370 PRINT TAB(8)"PRESS Q TO QUIT PROGRAM"
1380 GEKEY R$
1390 IF R$="R" THEN X=0:D=0:E=0:GOTO 1430
1400 IF R$="N" THEN RUN
1410 IF R$="Q" THEN PRINT CHR$(147):NEW
1420 GOTO 1380
1430 FOR L=3592 TO 3631:POKE L,32:NEXT
1440 FOR G=3166 TO 3466 STEP 40
1450 FOR L=1 TO 8:IF PEEK(G+L)=32 THEN POKE G+L,46
1460 NEXT:NEXT:GOTO 1070
1470 FOR G=1118 TO 1398 STEP 40
1480 FOR L=1 TO 8:IF PEEK(G+L)=32 THEN POKE G+L,46
1490 NEXT:NEXT:GOTO 1070
1500 DATA 008,001,007,002,006,004,005,008
1510 DATA 004,016,003,032,002,064,001,128,
```

A PRACTICAL GUIDE TO HACKING



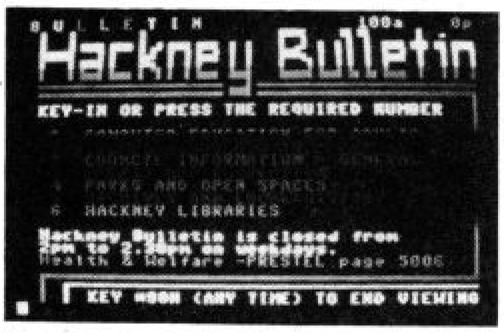
So you've listened to all the hype about hacking and you're all set to crack the Pentagon. Forget it. The reality of hacking is quite different. **Ken McMahon** has been staying up nights with his modem and Horlicks to provide this realistic and practical guide to playing around with communications.

THE EQUIPMENT

Assuming you are using the Commodore modem, in order to access viewdata systems and most bulletin boards you'll need the appropriate software. This is available free on *Compunet* to enable users to log on to *Micronet*. Alternatively, if you're using a Prism 1000 modem and OEL Comms Pack that'll do as it stands.

Some systems, notably those belonging to certain universities, adopt a scrolling format for data output as opposed to chucking it out a page at a time. To make sense of this you'll need another piece of software, a *terminal emulator*.

Again, one of these is available on Compunet. It's by Y2 and is called simply 'terminal'. At ten quid it's a bit steep but, with one or two exceptions, it works reasonably well.



GETTING INFORMATION

The manner and extent to which you go about obtaining useful info largely depends on the kind of hack you want to perpetrate. For the novice hacker, the best way to proceed is to follow the well-worn path of those who have gone before you. This way you can build up experience before venturing into virgin territory.

A useful place to start is *'Hackers Hangout'* on Compunet. At one time this contained hundreds of interesting phone numbers, most of which have now disappeared. I'm not sure whether Compunet have a hand in this although they recently denied exercising any form of editorial control.

Chatline on Micronet occasionally throws up a few snippets of useful info. A generally more fruitful source of info are the numerous bulletin boards. As well as telephone numbers they sometimes contain details of log on procedures and passwords.

THE HACK

Armed with your information you are now ready to make an attack on the target of your choice. Phone the computer in accordance with the instructions for your particular modem and software. If all goes well you will be presented with a log-on screen telling you who you're talking to and requesting a user ID and password.

Here, some intuitive guesswork is required. Where numeric input is required combinations of the same number are worth trying, i.e. 1111111111. Common passwords are DEMO, TEST, NETWORK, HELP, FRED, SYSOP, SECRET. Some systems will let you go on for ever entering invalid passwords. Most will attempt a disconnect after a few attempts, although I have managed to thwart one simply by pressing RETURN. Look for clues in the log-on page. If it says 'XTEL USERS SEE PAGE 12345' try typing in XTEL. Basically it's a question of using your brains. Try to think 'if I was a legitimate user of this service what kind of password would I use?'

FAILURE

A number of things can, and usually do, go wrong in the beginning. If having made a connection you are left staring at a blank screen, there are two possibilities. The first is that the host computer is not sending or receiving data at the same rate as yours (which incidentally is 1200/75 bits per second), in which case forget it.

Secondly, the host computer may need a prompt to start transmitting. Try RETURN or sending CTRL characters. If you get garbage on your screen the odds are that the terminal software isn't correctly configured. In this case it's a question of messing about with the parameters until you get it right.

SUCCESS

If you do have any luck breaking in, don't forget the person who gave you the information in the first place. Either mailbox them with the good news or place the information back on the board where you found it.

A note of caution. Always bear in mind that the object of hacking is to pit your wits against somebody else's security system. If you unwittingly uncover the plans to some mega-corporation's latest prototype I would think very carefully about the legal implications before spreading it on every bulletin board in the country.

THE HYPE

In recent months a good deal of garbage has appeared regarding the subject of hacking. So, in case you're labouring under any misapprehensions, let's set the record straight. Unless you are either very knowledgeable, or very clever (or both), the odds that you will gain access to a computer containing highly sensitive information are extremely remote.

In my experience even moderately secure systems are difficult to crack without doing a lot of research and accumulating a large phone bill in the process. Even if you do gain access what you find is generally of little or no interest.

Hacking is really the hi-tech equivalent of solving crossword puzzles. So unless your interest is in cracking the seemingly uncrackable I suggest you stick to programming, playing games or the numerous other pleasures of computing. You'll find them more interesting and a lot less expensive.

HOT SHOTS!



Right son, I'm booking your for impersonating a gossip columnist.

This month's column comes to you direct from Brands Hatch, where your ace reviewer has downed typewriter and long forgotten his highest score on *Pole Position, Talladega* and *Pitstop II*, to take the seat of the real thing. There's not much room in a Formula Ford 1600 for a typewriter but I've squeezed it in, so it's down into third for Druids and into this month's gossip.

In fact, the whole thing is in aid of a launch for Ariolasoft's new game *Racing Destruction Set.* Ariolasoft boss, **Frank Brunger**, donned a police helmet and booked us all for speeding before leaping into his car to try and break the world speed record himself. Having failed he was followed by an employee of his who broke all the track rules and was loudly carpeted by an irate man in the control tower.

I should also mention in despatches a gentleman from a rival magazine who performed so badly at the wheel that he wasn't allowed to continue. No **zzip** these boys . . .

I'm going to boast now, just for a change. When I reviewed Anirog's *Slap Shot* a few months back in April, I said (and I quote) "pity it hasn't got the facility for a huge punch-up, though". My wish is Anirog's command it seems. Their new football game, **Five-a-Side**, has a scenario in which two players slug it out on the pitch. I seem to have this knack of inciting people to violence (see you at **Upton Park** this season, the home of good football).

Whilst I'm getting excited about the start of the season there's a new intricate board game out for the 64 entitled *Bryan Robson's Super League.* I popped along to meet **Robbo** at its launch earlier this month to find out what he had to say about it, and what games he liked. He hadn't played the game, hadn't had anything to do with it and didn't even have a computer at home. A full review of this fireside favourite follows next month . . .

Can we expect a follow-up to Activision's **Decathlon** soon? Whilst snooping around at their offices, pencil-torch in hand, micro camera in pocket and reeking of Casablanca aftershave, I came across a pad of paper with notes on Ocean's **Hypersports**.

They thought the loading music was excellent, but they seemed to have a few problems when it came to playing it, especially the horse which was described as 'impossible'. **Hint:** you need plenty of height, and you get that by delaying his take-off until the last possible moment and waggling immediately his hands leave the horse.

Whilst I'm going through a drawer there a security guard bursts in and tells me that someone out there really likes **Web Dimension**, the psychedelia-like light and music program that I failed to warm to in July. In fact, this guy liked it so much that he played it for 13 hours at the CES show in Chicago. He shows me a picture of a man with zombie eyes fixed on a screen. Was he a zombie before he played it I wonder . . .

One game you won't have bought yet is **Red Arrows**. It's been advertised all over the home computer press for months now. But still no sign of it. Will it ever get off the ground . . .?

One game you will see very soon is **Superman**, our preview this month. Word has it that **Beyond** paid some £100,000 for it, beating a host of other software companies, including US Gold.

I think it's about time I mentioned **Beach-Head II**. I've been meaning to have a word with you about it for a while. Don't you think it's the sickest thing yet to come from Commie bashing, Reaganite Bruce Carver? Knife-throwing, with blade-in-the-chest sound effects. Good clean fun that. What next though? Might I suggest Soweto Riot — put down the revolting natives, or Napalm over Saigon, in which you have to burn as many civilian villages as possible, or maybe Hiroshima Hit Squad — fly the Enola Gay and drop the Bomb. Sicko . . .



The mean pose and the deadly paunch pictured above belong to Greg Barnett, programmer of *Way of the Exploding Fist.*

Greg, who's never thrown a karate punch in his life, is working on a sequel to Melbourne House's martial arts hit, and it should be ready for Christmas.

Way of the Exploding Fist II incorporates ideas not used in the original and bases its style on contact karate. As the fighter you face different adversaries in different scenarios — some of which are fantastical.

Melbourne House also have a wrestling game tucked up their sleeves, but it's unclear as to whether this will be ready for Christmas. Anyone for *Big Daddy's Tag Wrestling* as the title?

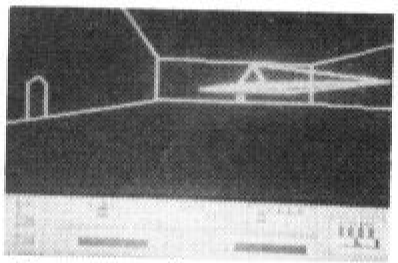
PREVIEWS



I have just seen the funniest and most bizarre game to appear on a computer yet. It's David Crane's new game for Activision, *There's Somebody Living in my Computer.* Game is the wrong description for this piece of software, it's more like a hi-tech goldfish bowl. The original title, *Pet Person*, gives you a better idea of what it's all about.

You begin with a present wrapped in a pink bow on the screen. Unwrap it by tapping the space bar, but bear in mind how you do it because this affects the whole thing. The wrapping then falls off and you're presented with a person in his own little house. A pet person who appears to have a mind of his own — like any other pet.

And so his life continues. All day long he'll go about his business in the house, followed around by his little pet dog. As his owner you can do things to him. Ask him to play the piano, ring his doorbell, send him a record. Occasionally he'll shut himself in the closet, or hide behind the piano. This bloke is warped! I've been raving about it since I saw an unfinished version and I'm sure it'll be a massive hit.



***Mercenary* is a new title** released by Novagen Software (of *Encounter* fame), which the company promises combines flight simulation with adventure and arcade action.

The game combines 3D vector graphics of the kind used in *Elite* with the exceptional speed of play, claims Novagen.

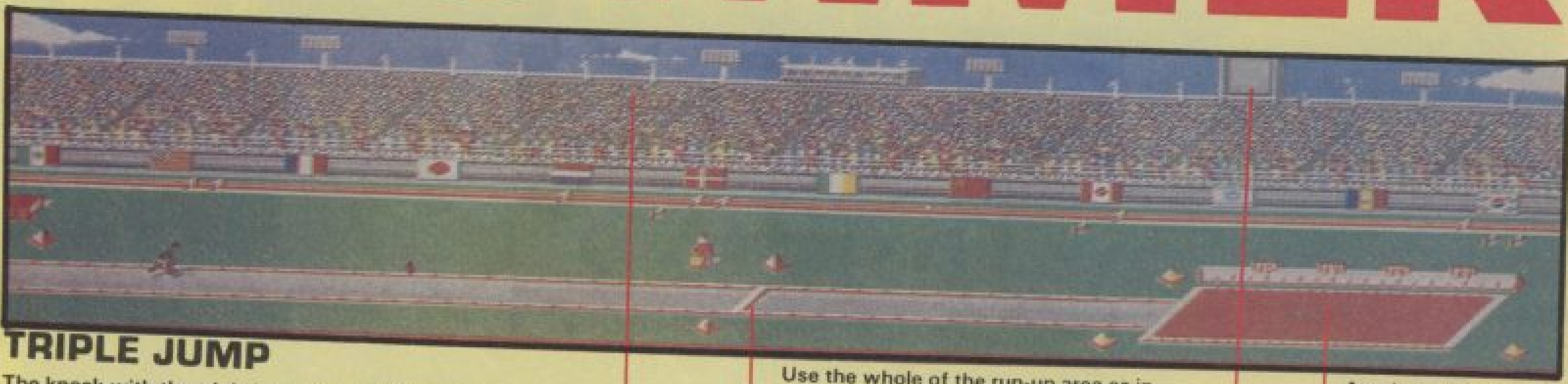
Programmed by Paul Woakes, the game turns you into a 21st century mercenary orbitting the planet Targ in search of supplies and energy crystals. There are two basic scenarios: flying over the planet, or beneath its subterranean chambers.

The variety of random elements from adventure interaction, breathtaking graphics through to zapping it up make the prospect of *Mercenary*'s release this month pretty appealing.



BLUE MAX 2001
64
64
THE MAX CHATSWORTH LEGEND LIVES ON
INTO THE 21ST CENTURY....
You are Max Chatsworth IX, a direct descendant of Max Chatsworth of BLUE MAX fame. You have lived and breathed his legend, and now fate calls upon you to fight an evil so foul that he could not even have imagined it.
The FURXX empire has extended its iron hand to Earthbase Gamma IV, and captured it. The inhabitants who were not killed in that struggle, were enslaved and sent to FURXX conversion processors to be drained of their life force, so that the FURXX TimeMasters could extend their own lifespans.
Having effected an easy victory, the FURXX now intend to invade all earth colonies and finally capture the earth herself.
Your mission is to penetrate enemy defences, destroy their hoverfields, and finally destroy the symbol upon which the FURXX EMPIRE IS BUILT. And this must be accomplished IMMEDIATELY, for the fate of the world rests in your hand!
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SUMMER



TRIPLE JUMP

The knack with the triple jump is not to hurry the joystick action. Smooth movements that coincide with your athlete's hop skip and jump are necessary to cover a good distance. Get the stick forward as fast as possible to increase your jump.

The crowd cheer appreciatively for a good jump.

Use the whole of the run-up area as in any field event — you cost yourself distance by falling short of the board.

Your distance is displayed on the screen.

Any jump over 17m is good going. A fault leaves your man sprawling despairingly in the sand.

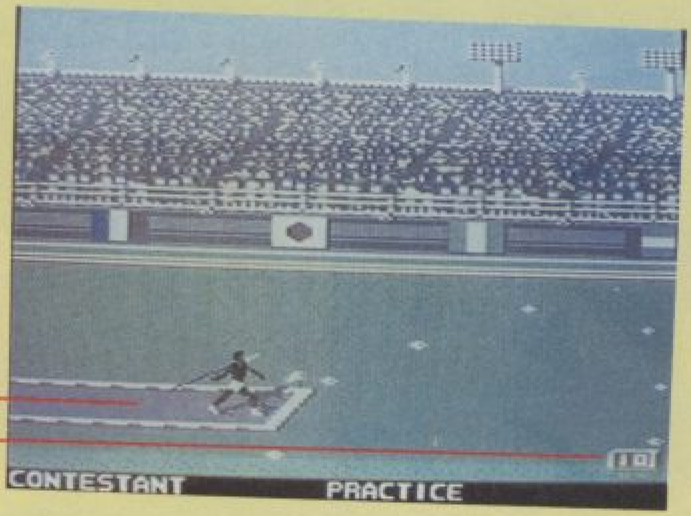


ROWING

Don't waggle the joystick furiously as if you'd been surprised in the middle of *Decathlon*. This will get you nowhere fast. Make sure that you begin with a left movement on the joystick, then proceed with gentle but firm strokes, making sure that the oars reach their furthest extent in front and behind. Accelerate this action in time.



Increase speed on the run-up by tapping the fire button frantically. It's best to use a fire button on the side rather than one on top of the stick. The moment of delivery is crucial, you should be hitting the fire button until you push the joystick left for the throw. Make sure you release the joystick with a nice snap back.



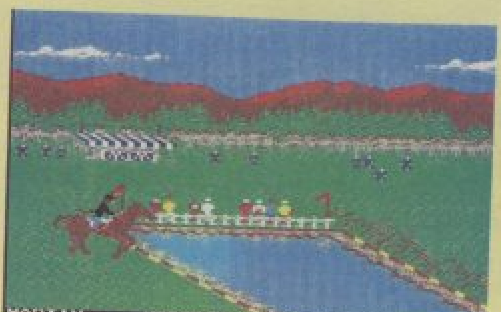
JAVELIN



You should be able to throw upwards of ninety metres this way. A hundred is impressive work, but possible.

WRONG: You've held the joystick back too long. The javelin will fly off the top of the screen and come down sharply.

THE TAKE OFF: Build up speed by pushing forward on the stick a couple of times and take each fence at a reasonable pace. The knack is not to get too close to the fence when you take off. Too far away and you'll get in all kinds of a mess.





THE LANDING: Pull the joystick to the left just as the horse's front hooves reach the ground. Any other time will result in a fall. Accelerate the horse in the final third of the course.

Excessive faults and time leads to disqualification.

EQUESTRIAN



THE REFUSAL: Your approach to the fence was too close. Reverse the horse and take the fence again.

COMPETITION

This is *the* sports simulation on the Commodore 64 and we're offering free copies of it for the first twenty-five names out of the bag who can tell us what are the ten athletic disciplines involved in the Decathlon. Send your answers to Summer Games Competition at the usual address.

There have been plenty of sports simulations for the 64, like *Decathlon*, *Daley Thompson's Decathlon*, and now *Hypersports*, but none as good as *Summer Games II*. We made it the **Commodore User Screen Star** last month and now, having played it into the ground, we've decided it's so good that it's worth a spread of hints and tips. The major thing to

GAMES II



FENCING

This event looks forbidding, but in fact the droid is slow and clumsy. Beat him on all levels by waiting until he lifts or drops his guard as shown. Thrust by pushing backward then forward in succession. Your man will cover a lot of ground this way.



CYCLING

You have to understand that the computer reacts as if you were physically turning that arrow indicated. Twist it round and keep its momentum going. Twirl madly and you'll lose the rhythm completely and slow up.



Bar will go up to 2.5m — 2.4 is attainable.

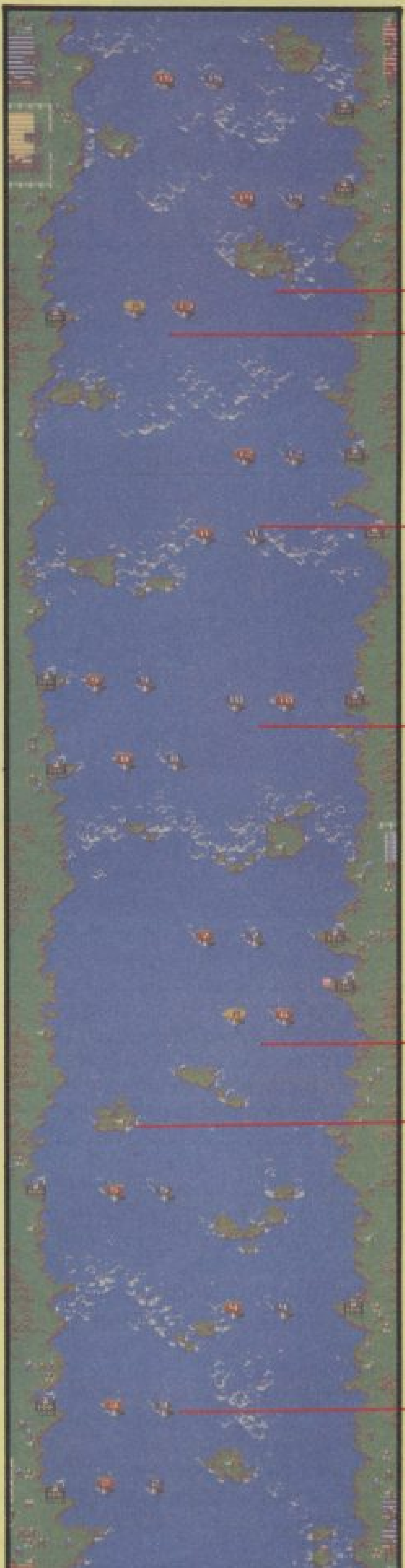
Point of take-off.

Push stick forward as athlete is in mid-flight.

HIGH JUMP

A measured approach is enough to take you well over 2m. Push forward on the stick in the second half of your run-up to take your man close to the bar and take off as soon as you pass the first post holding the bar up. Push the stick forward in mid-flight to make your man roll.

bear in mind is — where other games claim to be simulations but have more to do with imagination, *Summer Games II* is the real thing. It *simulates* the activity involved in the events it contains. This is important because unless you approach it properly, your performance will be dismal. Keep this in mind and you'll do just fine, read on and you'll do even better . . .



KAYAKING

Guide your kayak through fifteen gates as quickly as possible without making mistakes. You should be looking for a sub-3 minute time, because it's possible to float down the course, miss all the gates and still get a time of 5.19. Pump the stick once for every stroke and try and use the current and rocks to your advantage.

Paddle to the right of these rocks.

Don't forget to reverse through this gate.

The current seems stronger here. Paddle backwards to slow yourself down.

Gate ten is tricky. You must come through the rear of the gate but going forwards, so you must slow right down out of gate 9 and paddle upstream.

Don't forget to reverse through this gate.

Come out of gate 5 and paddle to the right of the rocks.

The first three gates are easy — use the current to take you down but don't come out of number 3 too fast or you'll never be able to turn in time for numbe 4.



A whole new world awaits you and your 64. The world of Prestel, Micronet, Viewfax, Homelink, Citiservice, Compunet (Commodore's own database) etc. This is the world of product reviews, mainframe games, home banking, business information, commodity futures, armchair shopping, real time conversation, electronic notice boards, helpful tips, ICPUG, news, Telex-Link, Mailbox, Chatline, Gallery etc. This is the world of telesoftware, with programmes to download into your 64 and save to disk or tape. Many telesoftware programmes are provided free of charge or at nominal cost.

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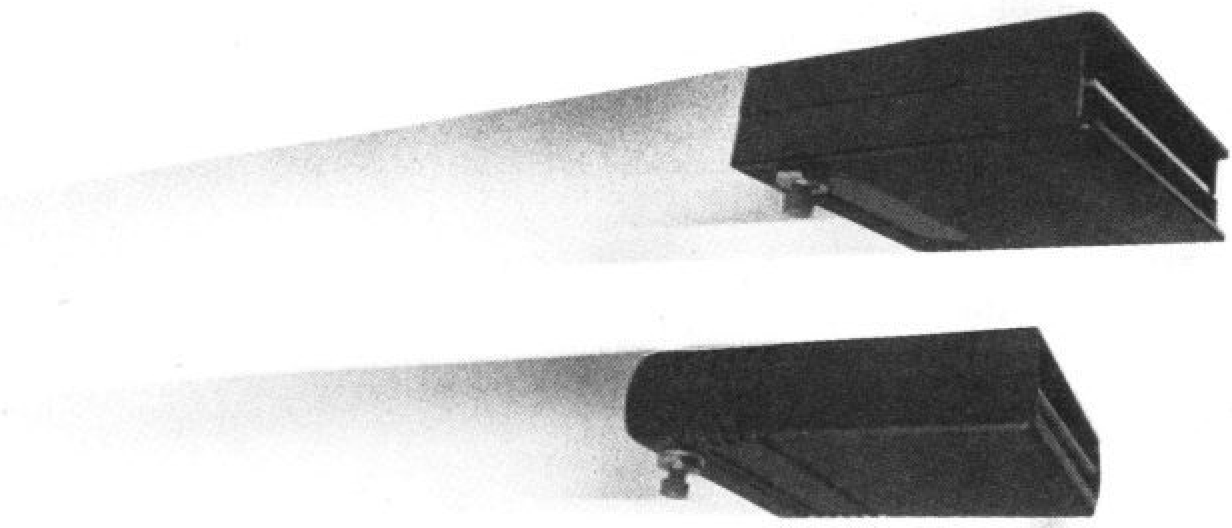
CO2

Turbo and a whole lot more

1541 disk drive owners aren't just being bombarded with 'turbo cartridges to speed up disk operations, they're being cajoled with devices that include a whole load of other utilities. Robcom's 'Turbo' range and Quick Disk Plus from Evesham Micros are just two of the latest examples.

Two 1541 utility cartridges reviewed

by Steve Jedowski



Both the devices we'll be looking at are cartridge-based utilities which simply plug into the cartridge port on the 64 with no other connections required.

Robcom 'Turbo' series

So let's start with the 'Turbo' range from Robcom. Sensibly, the company has produced a range of five cartridges (Turbo 10 to 50) so that you don't have to buy utilities you may not need. Here's how the range shapes up:

Turbo 10: Turbotool — cassette turbo: £24.95.
Turbo 20: Machine-Code Monitor: £24.95.
Turbo 30: Combi Turbotool — cassette and disk turbo: £29.95.
Turbo 40: Turbotool and Machine-Code Monitor: £34.95.
Turbo 50: Combi Turbotool and Machine-Code Monitor: £39.95.

So the range is quite extensive; from the Turbotool, which allows you to make high speed back-up copies on cassette, to the 'Top of the Range' Combi Turbotool and Machine-code Monitor, which combines cassette and disk turbos with a toolkit and a machine-code monitor, and is the version we investigate now. By the way, you get a free azimuth alignment cassette with each cartridge.

The Turbo 50 cartridge is five utilities rolled into one; Tape Turbo, Disk Turbo, Basic Toolkit, Machine-Code Monitor, and Centronics interface.

● **Turbo tape:** Firstly, the Tape Turbo allows you to make 'turbo' copies which will then, with the cartridge installed, load more than ten times faster. Needless to say, its use on commercial programs is severely restricted firstly because most cassette-based games are protected and use some form of fast loading device, and secondly although the cartridge uses none of the memory reserved for Basic any program which uses from hex C000-CFFF will crash. So its main intended use is for your own 'home-grown' programs.

● **Disk Turbo:** this claims to speed up loading by five times. This does not require you to make a 'turbo' copy as you do with the cassette turbo. However, it too has the obvious limitation that it will not work with all commercial software and even if it does, the speed increase might not be that dramatic.

The five times increase in speed was only obtained with unprotected software; for example, a game which normally took 40 seconds loaded in under eight seconds. Software supplied on heavily protected disk either showed no significant speed improvement or, if there was a memory clash, refused to work at all. Vizawrite, the word processor, refused to work which is especially disappointing since it is mentioned by name in the manual in the section on using printers.

● **Machine-code monitor:** The Machine-Code Monitor needs to be started by using the 'MON' command followed by the start address of the area of memory you want the monitor to occupy. Not much to say about this except that it has all the facilities expected of a monitor including output to a printer.

● **Basic toolkit:** This consists of 17 commands to assist the programmer. Auto line numbering and Renumbering are provided as well as 'PLIST', which lists a program one screen at a time, and 'HELP' which highlights programming errors.

The cartridge has a Reset switch (at present located on the top of the cartridge but to be relocated on the side on production versions) which could be used with the 'OLD' command to restore a program which might otherwise have been lost.

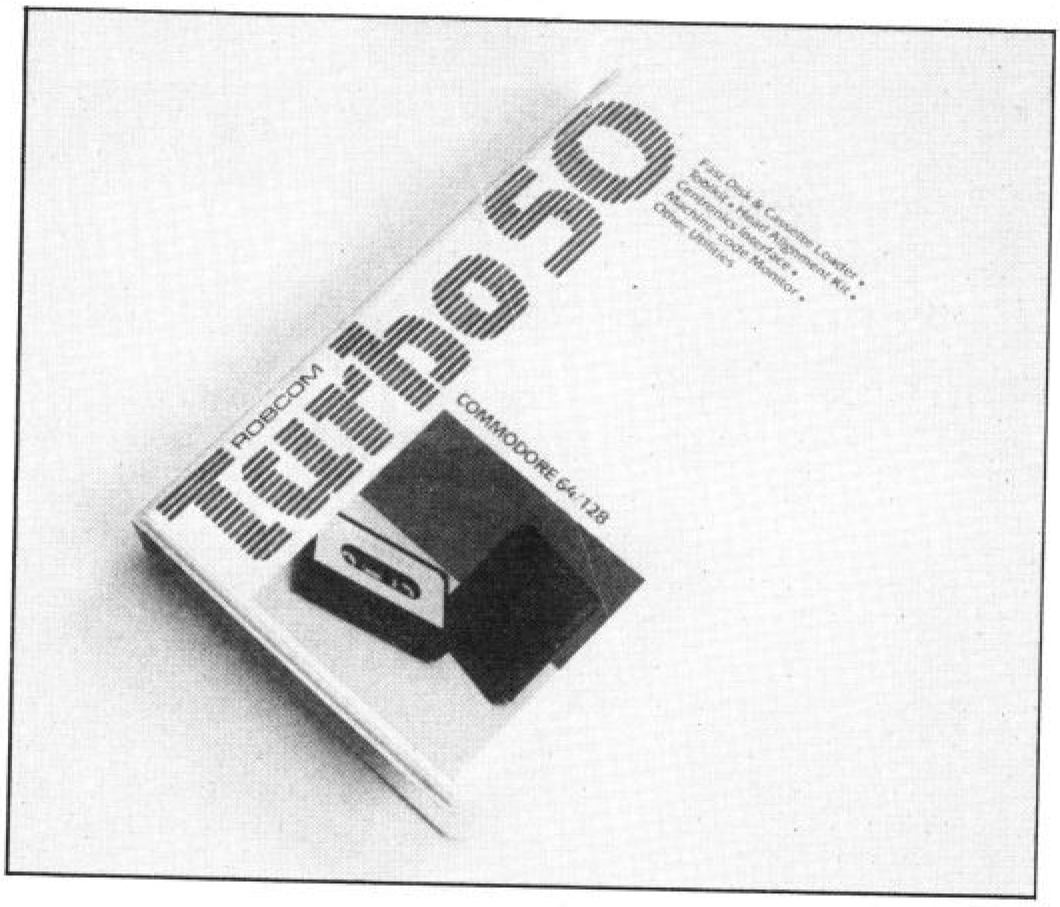
The function keys have also been pro-programmed with commands thought to be useful. Function key 3 loads a program from disk whilst keys 2 and 3 provide the facilities of copying from turbotape to turbotape and from turbotape to disk.

The aforementioned 'PLIST' command is assigned to function key 4 allowing listing to the screen page by page. There are 16 disk and tape commands including abbreviated forms of loading from disk and displaying the disk directory to the screen without disturbing the program in memory.

● **Centronics interface:** The Robocom cartridge allows the use of non-Commodore printers by including a Centronics interface. This is done by configuring the user port as a Centronics port so allowing not only a greater choice of printers but also increased printing speed. Listings can be sent to the printer in the 'transparent mode' where all characters are sent unchanged to the printer or in the 'listing mode' where all the Commodore graphic characters are translated into readable text.

● **Tape-head aligner:** Turbo 50 cartridge also has a special program that checks head alignment on the datasette. A 'Reference' tape is included which allows you to make minute adjustments (with a small Phillips screwdriver) until you get the required pattern on the screen.

At just under £40, Turbo 50 represents good value for programmers who need all its facilities. Wisely, the cartridge will not copy 'protected' software. By producing a range of five cartridges Robcom is offering something for everyone, at an easily affordable price.



Quick Disk Plus

The Quick Disk Plus Cartridge from Evesham Micro Centre, costs £19.95. It also has a 'Reset' switch which is unfortunately on top of the cartridge where it might easily be depressed by accident.

As its name implies it is primarily a 'turbo' disk utility but it also has other extra facilities.

Unlike the Robcom Cartridge the facilities offered by Quick Disk Plus are all concerned with the use of the Disk Drive (apart from the printer utilities). Included are a ten second disk formatter, a three minute Disk Back-up program (which only copies unprotected disks), a selective file copier, and a facility which (like the Robcom Cartridge) configures the user port as a Centronics port so that printers with Centronics type interfaces can be used by the Commodore 64.

Entering 'CH' displays all the extra commands to the screen with a brief description of their use. This is far better than scrambling through pages of a manual no matter how well written it is.

● **Turbo utility:** The Quick Disk's primary function is as a 'turbo' utility and here its performance is similar to that obtained with the Robcom Turbo 50 Cartridge. At best the Quick Disk Plus matched the claimed four fold increase and at worse it gave no speed advantage at all. With Vizawrite, which the Robcom cartridge refused to load, the Quick Disk Cartridge gave no speed improvement at all.

● **Disk back-up and format:** The three minute disk back-up performed as expected but unfortunately (or fortunately) only copies unprotected disks. The ten second Disk formatter takes twenty seconds (unless my stopwatch is running fast) but even this is far quicker than the eternity that the 1541 inflicts upon us.

● **Centronics interface:** Entering the command 'CP' is meant to configure the user port as a Centronics port capable of addressing any printer with this type of parallel interface.

It has two modes of operation similar to Turbo 50. One gives Commodore graphics and the other produces a readable text printout. This aspect of the cartridge's operation could not be tested since there is a bug in the section of code controlling this routine, which Angus Ager of Softcell says is the result of corrupted code caused during the 'blowing' of the eproms.

This bug is only present in the pre-production review cartridges, and production cartridges, on sale to the public, will have this problem rectified.

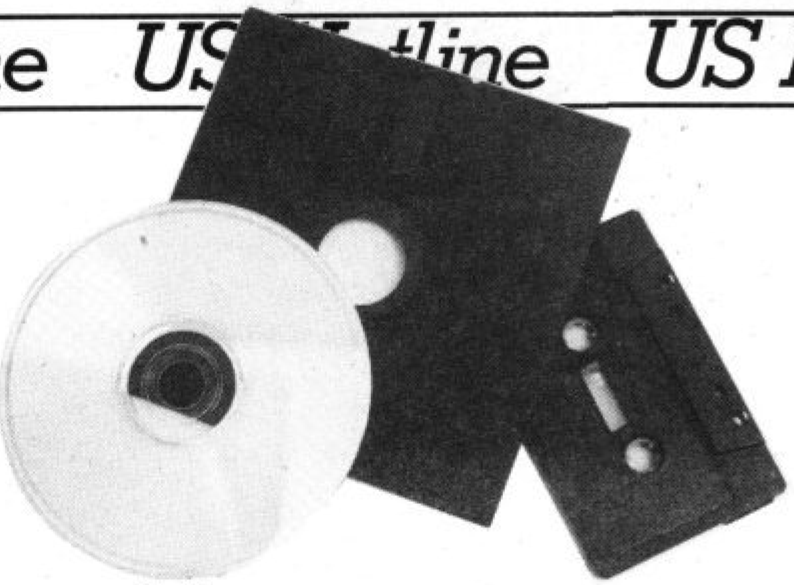
Conclusions

The choice between the Robcom or the Quick Disk Plus Cartridges depends on the facilities you want from such a cartridge utility. The Robcom Turbo 50 cartridge provides both tape and disk turbos, a toolkit and a machine-code monitor for just under £40 whilst the Quick Disk Plus offers a disk turbo and enhanced DOS commands for the budget price of £19.95. However, Disk Turbo routines used in both cartridges have limited use on commercially available software. Neither cartridge offered any reduction in the time taken to 'save' a file to disk.

For anyone who indulges in a great deal of programming involving frequent use of the 1541 drive, one of these cartridges (Robcom or Quick Disk Plus) should be at the top of the shopping list. The final choice will depend on what facilities you want and how much you are prepared to pay. □

- Robcom Cartridge
- Share Operating Services, Hyacintenveld 69, 4613 DL Bergen Op Zoom, Holland
- Price: £39.95
- A 'must' for programmers rather than games-players

- Quick Disk Plus Cartridge
- Evesham Micro Centre, Bridge Street, Evesham, Worcs. Tel: 0386 49641
- Price: £19.95
- Good 'budget-priced' disk turbo utility.



You say you want a Revolution?

Dan Gutman reports

Just think of it: throw away your boredom-load tapes, consign your fragile floppies to the waste bin. The compact disk has arrived, and is all set to cause a revolution in data storage. Dan Gutman can hardly contain his excitement . . .

Revolutions come hard and fast in the American computer biz. These days, every see-thru dust cover is called "a revolutionary technological breakthrough" in the advertising blurb. When a *real* revolution comes along, we almost miss it. Well, there *is* a real revolution brewing right now, and it may be the next evolutionary step in computer software after punched cards and floppy disks. I hope your country is getting as excited about it as I am.

CD. Compact disks. Get used to the sound of it rolling off your tongue. Do you have compact disk players hooked up to your stereo systems yet? If not, you've undoubtedly heard of them. They turn your living room into a concert hall. They don't warp or wear out. They're not scraped by a needle — they're caressed by a beam of light. They're indestructable. You can pour maple syrup over one and just wipe it off like a kitchen countertop. Try that with your tapes or floppies.

In the coming years, the compact disk may very well make our vinyl record albums obsolete, just like LPs did to the old 78s. It's the first revolution in music technology since stereo was introduced.

Now it just happens that those microscopic ones and zeros that digitally store music on a compact disk can just as easily store computer data. Get the picture? Hitch a laser beam to a computer and you can throw those pesky floppy disk drives and cassette recorders in the bin.

The Good News

The biggest advantage compact disks have is in storage capacity. One of the first "CD-ROM" drives on the market, the Sony CDU-1, will store 540 megabytes on one side of a disk. That's *1,350 times* what they can jam on a floppy, according to Sony — 270,000 double-spaced pages of text on a disk the size of your old 45's! This is what gets American computer people using words like "revolution".

With so much storage space to work with, software will go through some changes. It will be possible to put IBM, Apple, Commodore and other formats of the same program on a single disk. You will be able to put all the software you'll ever need on a single disk. You'll be able to stick ten years of stock prices or soccer statistics on a single disk. For those of us who can't even fit 15 lousy pages on our Commodores, it's almost too much memory to comprehend.

We can only guess the possible applications. Education is a natural. Medical students will be able to practice surgery by using an interactive disk without risking the life of a patient. High school students will be able to do on-screen chemistry experiments — instead of blowing up the whole school, they'll watch an explosion on television. At home, you'll be storing huge databases — dictionaries, encyclopaedias, and telephone books on disk.

At the June Consumer Electronics Show, Atari turned a lot of heads by interfacing its 260ST "Jackintosh" computer with a Philips CM-100 CD-ROM drive. A compact disk containing an entire encyclopaedia was demonstrated, and I swear, the conventioneers were looking up things as if it was their first time inside a library! You know that Commodore will do the same thing once the Amiga is available.

Now the Bad News

If it all sounds too good to be true, it is. Like any new technology, compact disks have a few obstacles to overcome before they tear the cover off the computer industry. First of all, there's the old hardware/software Catch-22. The public won't buy the hardware until there is some software to use with it, and the software companies won't release product until there's an audience for it.

When software *does* start to appear, it will come a lot slower than floppy disk or cassette software. It takes much more time and money to develop programs that fill 170,000 pages. And while it's nice to think about putting a telephone book on a single compact disk, who's going to pay a couple of hundred bucks for a telephone book?

CD-ROMS are not free of technical problems either. For one thing, they're "read-only." Data can be accessed over and over, but it can't be written, changed or erased. The next generation, called WORM ("Write once, read many times"), is in prototype stage now and should be out in a year. Disks that can be erased and re-written like our floppy disks are under development, but don't expect to see them for two or three years.

CD-ROMS also suffer from limited graphics and slow access time. Someday we'll be able to look up "Laurel and Hardy" in our optical encyclopaedias and instantly see actual clips from their films as well as a written biography. But the Atari encyclopaedia demonstrated in Chicago was all text.

Finally, there are manufacturing problems to overcome. With CD music, a few misplaced ones and zeros on a disk probably won't be noticeable, even to a trained musician. Quality control has to be much stricter with data — a single incorrect digit could mean a catastrophe.

Most likely, compact disk drives will have to go through the same agonizing cycles that personal computers have already been through in the last ten years. The hackers, hobbyists, and pioneers may have to experiment with the compact disks before it becomes the technology for the rest of us.

Japanese invasion

On the hardware front, Sony invented the compact disk and promises to be a major supplier of CD-ROM disk drives, along with many other Japanese companies. This means that in the coming years, US companies may not rule the computer industry over here. The Japanese invasion is finally coming, but it's not the long-awaited and so far disastrous "MSX Invasion" — it's the compact disk invasion.

So computer systems will share the same disk drives as stereo systems. The computer industry may have been fortunate enough to select a new data storage system just as it's becoming a worldwide phenomenon in music.

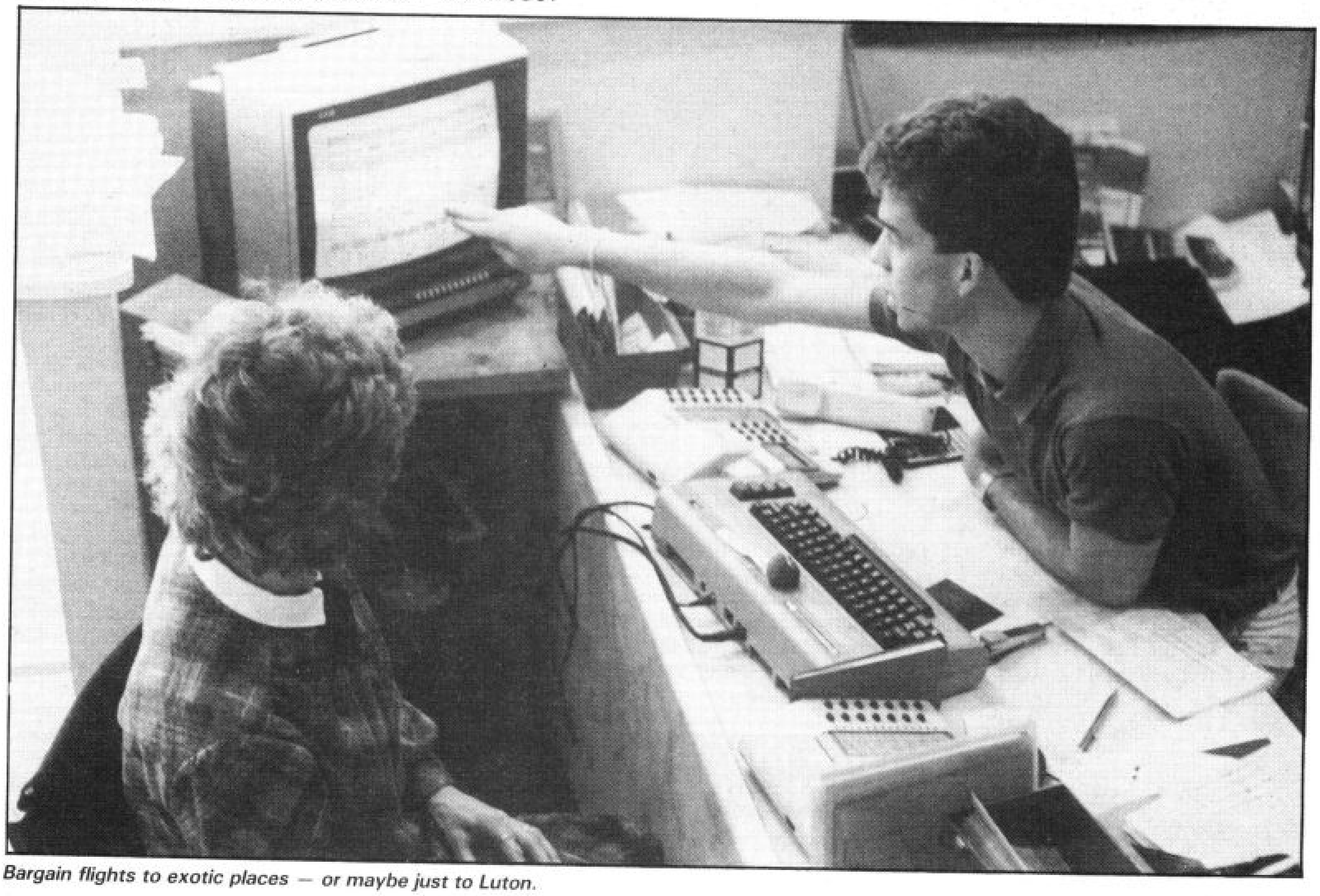
Let's hope they don't screw it up.



Want to book a flight to Miami, Athens — or even Torremolinos? There's so many airways, so many confusing schedules and so many different prices, that even travel agents get wrapped up in mounds of paper. But at least one air-travel company has solved the problem — with a Commodore 64. Our man with the notepad took a London bus to talk to Scheduled Air Services.

Have

by Ken McMahon



Bargain flights to exotic places — or maybe just to Luton.

Staring out of the window at the dismal cloudy scene that passes for summer here in deepest South London I decided enough was enough. I was getting out. Holiday time. The problem with being an impoverished journalist is that budgets don't stretch to three sun-soaked weeks in the Bahamas so the first stop is not Thomas Cooks but the local newsagents to scour the daily papers for cheapo flights to somewhat less exotic destinations.

The first phone call is to an outfit calling themselves *Scheduled Air Travel Services*. While the phone rings, images of a back street basement pass through my mind. There's a fat, middle aged ex door-to-door salesman sitting behind a mountain of dog-eared box files and a mountain of dog-ends piled precariously in an ashtray. An inch of ash drops into his lap as he wearily leans over and answers the telephone.

"Good morning, Scheduled Air, can I help you?". First illusion shattered, this guy's not a day over twenty-one. I explain I want to go to Rome some time over the weekend, say between Friday and Monday, coming back in a fortnight. My request is followed not by the sound of rustling timetables but of experienced hands travelling over a keyboard (illusion number two flies out of the window).

Before you can say 'in-flight entertainment' I'm being offered the choice of several flights faster than I can write them down. A hundred odd quid to Rome and back strikes me as pretty reasonable so I go for the Friday evening option with Ethiopian Airlines. The voice tells me he will ring back and confirm the booking and does so.

I'm impressed by this show of efficiency and as I make my way down the road to pick up my ticket I ponder the miracles of modern technology which made such a fast and efficient service possible. Perhaps a couple of grands worth of computer hooked up to a vast airport database giving up-to-the-minute information on airlines flying to just about every destination in the world?

Wrong again, there it was in front of my eyes, a Commodore 64 hooked up to a 1541 disc drive and a Hitachi TV. Thoughts of sunning myself on an Italian beach faded as I concentrated on discovering how the humble 64 was revolutionising the travel business in West London.

Going into business

The fresh faced youth behind the counter is David Hall, twenty year-old Managing Director of Scheduled Air Travel Services. During the brief intervals when he didn't have a telephone in both hands he explained how Scheduled Air came into being and the part the 64 has played in its growth.

David started the company in August 1984. Apart from his knowledge of the travel business — gained from temporary jobs — he employed the use of an ansaphone, typewriter, and his bedroom as premises. In a mere two months things were outgrowing their domestic proportions and the company moved to its present location in Hammersmith.

By the spring of this year, despite having taken on a partner, there was still a lot of room for improvement in the service. The basic problem was providing customers with up-to-date information on flights without keeping them hanging on for hours while it was being searched for in flight schedules and price lists.

An obvious task for a computer, but why pick the 64? "I had no previous computing

64, will travel

experience and the Commodore was recommended by a friend who did! He thought the machine could do the job we had in mind. The cost was another important consideration. At the time we simply didn't have the money to go for anything more expensive."

DIY database

David's obliging computer-literate friend also agreed to write the software. Jerry Bateman, Customer Support Manager for a large West End computer company has put together a very professional looking database package with which it is possible to find flight details to one of over two hundred destinations in a very short space of time. David estimates that the package would have set him back to the tune of two thousand pounds had he obtained it from a software house specialising in this kind of thing. Even if that estimate is a little excessive there's no doubt that he's saved a considerable sum.

I had the good opportunity to watch the whole set-up in action during the many telephone interruptions in our conversation. As soon as a caller gives details of their destination this is entered in an abbreviated form at the prompt. The file is accessed from the disc and a menu appears showing all airlines which fly to that particular destination.

On choosing an airline a schedule of flights for the week is thrown up complete with flight numbers, departure and arrival times, the cost of the single and return fare and the agent from which Scheduled Air book the ticket.

If the customer isn't happy with any of the details, then it's simply a question of going back to the menu and choosing another airline.

The most impressive thing about the software is its overriding simplicity. Having watched it in use for five minutes or so I felt confident I could have handled it without any problems.

Easy updates

There's a separate program for updating files which is equally simple to use. The records are updated field by field and the whole file saved back onto disc. David didn't seem unduly concerned over the amount of time he spent on this. The procedure is quick and uncomplicated so, although the system has to be regularly updated, it doesn't take a great deal of time and effort.

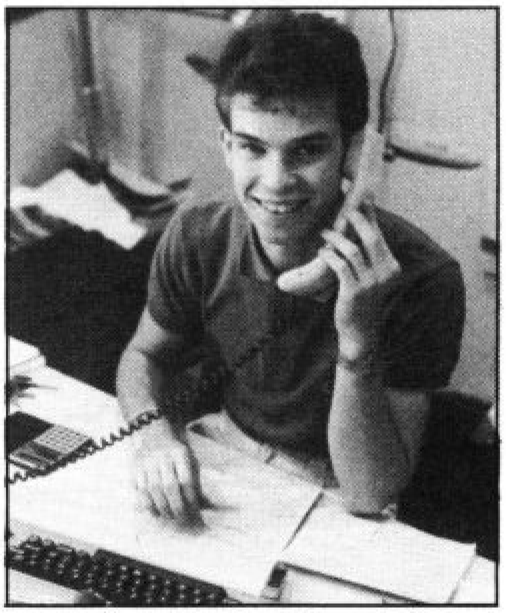
It's obvious that David's 64-based system has brought with it a lot of advantages. But, whilst talking to him, you get the impression that there are other, less obvious reasons for its taking pride of place on his desktop.

"You need something quick because there's not time to mess around with bits of paper while people are hanging on the phone. We're not one of these bucket shops with pvc seats with the foam hanging out all over the place. We like to make people feel comfortable". The office is indeed well-furnished and as further evidence of their efforts to please he reveals a filing cabinet full of travel trinkets from baggage tags to ticket wallets.

So does the Commodore actually provide a useful function or is it there just to impress the punters? The answer is probably both, but I suspect there is more of the image conscious marketing man's mentality than the systems analyst behind David's involvement with the 64.

Low-tech facade, hi-tech interior.





"I had no previous computing experience . . ."

Expanding horizons

As far as the future is concerned there are Big Plans afoot to increase the extent of computerisation within the business.

David would like to stick with Commodore equipment for the simple reason that it's given him such good service in the past. "It's never gone wrong or broken down" (more than I can say for mine) "and we use it all day long, six days a week".

The ideal situation as he sees it would be to have a keyboard and VDU at each desk giving access to a central processor running a more sophisticated version of the current software. It would then be possible to keep files of all customer requirements, thus making redundant the considerable amount of paperwork which is still done by hand. Such a system would also make the process of accounts and auditing a considerably easier task. Possibly a job for the new Commodore Personal Computer?

Given that he obviously doesn't intend to stand still on the computer front I was surprised that David hadn't ventured into some of these areas already. The 64 may not be capable of supporting multiple work stations but I would have thought that an accounts package or even communications with a database of the type Thomas Cook use was a feasible application.

The response was lukewarm. Perhaps I had forgotten I was dealing with a businessman rather than a computer enthusiast.

When the time is right and the right computer and software turns up at an affordable price then David Hall and Scheduled Air Travel will undoubtedly go in for computerisation in a big way.

Until that happens it's nice to see your favourite home micro playing a part in ensuring that you get where you want to go without too many delays.



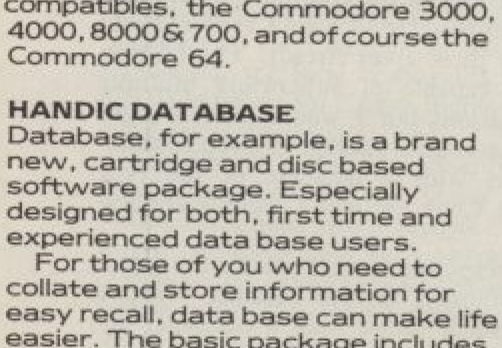
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HANDIC DATABASE

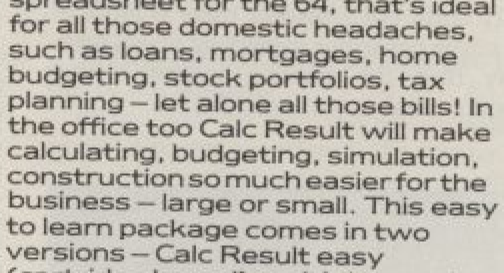
Database, for example, is a brand new, cartridge and disc based software package. Especially designed for both, first time and experienced data base users.

For those of you who need to collate and store information for easy recall, data base can make life easier. The basic package includes a mailing list and 4 different print programs.



CALC RESULT

Calc Result, the financial spreadsheet for the 64, that's ideal for all those domestic headaches, such as loans, mortgages, home budgeting, stock portfolios, tax planning – let alone all those bills! In the office too Calc Result will make calculating, budgeting, simulation, construction so much easier for the business – large or small. This easy to learn package comes in two versions – Calc Result easy (cartridge based) and Advanced (disc and catridge based with pedagogical manual).





TECHNICAL DATA

- **Spread sheet size** 64 X 254 X 32 pages
- **Consolidation:** Easy with the 32 pages available in Calc Result Advanced
- **Printing:** Flexible printing formats out to most popular printers
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The user of Calc Result will find among the applications given many useful examples of how to get the most from Calc Result.



THE Handic supermarket basket is full of 'goodies' for your Commodore 64. Here is a brief description of what they all are! Don't forget – if you need any more information, either clip the coupon (and tick column 'A') or give us a ring.

1 Mon 64
An outstanding Machine Code Monitor (cartridge based)

2 Teledata
Communication cartridge for use with the CBM 64, link up with Data-bases like the bank or supermarket, over the telephone lines.

3 Superbox 64
An expansion unit for the Commodore, which features three independant cartridge slots; IEEE interface that is totally transparent; has multi-user capabilities with IEEE; and a re-set switch which activates a cold start on the computer. This unit will connect up to 3 cartridges at the same time, which makes frequent altering between programs simple and reduces wear on the cartridge slot.

4 Vic Rel
Vic Rel (Rel 64) is a relay cartridge for the CBM 64 and Vic 20 which has almost limitless applications, such as control of burglar alarms, garage doors, door locks, electric radiators, lamps , transmitters, model railways, etc.etc.

5 Disc-based games
Handic have a set of disc based games for the Commodore 64, all are great fun and superb colour graphics. At around 9.95 each. Why not treat yourself to a few?
Quantity discounts are available on request – dealer enquiries are also welcome.



6 Diary 64
An ideal program for keeping track of telphone numbers, addresses, appointments, schedules, in fact the ideal time manager for all you sieve-heads.

7 Stat 64
The statistical CBM cartridge which ads 19 new commands to your Basic language. An excellent programming aid for all you statisticians.

8 Graf 64
A CBM cartridge that turns solutions of equations into graphical analysis, what you might call a plotter-jotter.

9 Handic Auto Modem
This modem is the expanded version of the Videotex modem (see illustration). When used together with the Handic Teledata Base 64 this unit enables you to set up your own data base with information.



Videotex Split-Speed Modem
This Split-Speed modem is especially designed to connect with computers over the telephone lines, its facilities include auto-dialling, line control, etc. (BT approval applied for).

10 RS232
A standard V.24 (RS232) interface for connecting the CBM 64 to printers and other peripherals.

11 Bridge 64
A cartridge bridge game for the intelligentsia.

12 Forth 64
A Forth generation programming language for people who know what they are talking about, and want to know even more.

Checklist



COMMODORE 64–SOFTWARE		A	B
CALC RESULT ADVANCED	99.00	☐	☐
CALC RESULT EASY	49.95	☐	☐
DIARY 64	19.95	☐	☐
BRIDGE 64	19.95	☐	☐
STAT 64	29.95	☐	☐
REL 64	34.95	☐	☐
MON 64	39.95	☐	☐
GRAF 64	29.95	☐	☐
FORTH 64	34.95	☐	☐
SSP (DISK BASED DIARY)	12.95	☐	☐
DISK BASED GAMES			
SPACE ACTION	9.95	☐	☐
SPACE TRAP	9.95	☐	☐
OISAC	9.95	☐	☐
Q-HOP	9.95	☐	☐
THE SHIP	9.95	☐	☐
MUTANT SPIDERS	9.95	☐	☐
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STELLAR CONFLICT	12.95	☐	☐
IMAGINATION	12.95	☐	☐
REAL ESTATE	12.95	☐	☐
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3M CABLE	4.95	☐	☐
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WORD RESULT 700 SERIES	258.75	☐	☐
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Bedford. Software Centre, 52a Bromham Road, Tel: 0234 44733.
Leighton Buzzard. DJ Computers, 17 Bridge Street, Tel: 0525 383929.
Luton. Boots, 82-86 Arndale Centre, Tel: 0582 20592.

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Aylesbury. Boots, 69-70 Friars Square. Tel: 0296 83661.
Chesham. Reed Photo & Computers, 113 High Street. Tel: 0494 783373.

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Cambridge. Boots, 65-67 Sidney Street and 28 Petty Curry Street. Tel: 0223 350213
Cambridge. Cambridge Computer Store, 4 Emmanuel Street. Tel: 0223 358264
Peterborough. Boots, 40-42 Bridge Street. Tel: 0733 65352.
Peterborough. Logic Sales, Unit 6 Midgate Parade, Tel: 0733 49696.
St Neots. Compute, 3 Cross Keys. Tel: 0480 72013

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Chester. Computer Link, 21 St. Werburgh Street. Tel: 0244 316516.
Crewe. Midshires Computer Centre, 57 Earle Street. Tel: 0270 589191.
Macclesfield. Computer Centre, 68 Chestergate. Tel: 0625 618827.
Warrington. Boots, 39-45 Bridge Street. Tel: 0925 574825.

CLEVELAND

Middlesborough. Boots, 88-90 Linthorpe Road, The Cleveland Centre. Tel: 0642 249616.
Darlington. Darlington Computer Shop, 75 Bondgate. Tel: 0325 487478.

CORNWALL

St. Austell. AB&C Computers, Duchy House, 6 Lower Aylmer Square, Tel: 0726 64463.
Bodmin. Microtest, 18 Normandy Way, Tel: 0208 3171/3182

CUMBRIA

Kendal. The Kendal Computer Centre, Stramongate. Tel: 0539 22559.
Whitehaven. PD Hendren, 15 King Street. Tel: 0946 2063.
Workington. Technology Store, 12 Finkle Street. Tel: 0900 66972.
Penrith. Penrith Communications, 14 Castlegate. Tel: 0768 67146.

DERBYSHIRE

Alfreton. Gordon Harwood, 69-71 High Street. Tel: 0773 836781.
Chesterfield. Boots, 35-37 Low Pavement, Market Place. Tel: 0246 203591.
Derby. Boots, 1 Devonshire Walk. Tel: 0332 45886.
Derby. First Byte Computers, 10 Main Centre, London Road. Tel: 0332 365280.

DEVON

Exeter. Boots, 251 High Street, Tel: 0392 32244.
Exeter. Open Channel, Central Station, Queen Street. Tel: 0392 218187.
Paignton. Computer Systems Ltd, 35 Hyde Road. Tel: 0803 524284.
Plymouth. Syntax, 76 Cornwall, Street. Tel: 0752 28705.
Plymouth. Computer Base, 21 Market Avenue. Tel: 0752 672128.
Plymouth. Boots, 2-6 New George Street. Tel: 0752 266271.
Seaton. Curtis Computer Services, Seaton Computer Shop, 51c Harbour Road. Tel: 0297 22347.
Tiverton. Actron Microcomputers, 37 Bampton Street. Tel: 0884 252854.

DORSET

Bournemouth. Lansdowne Computer Centre, 1 Lansdowne Crescent, Lansdowne. 0202 20165.
Dorchester. The Paper Shop, Kings Road. Tel: 0305 64564.
Poole. Lansdowne Computer Centre, 14 Arndale Centre. Tel: 0202 670901.

ESSEX

Basildon. Basildon Software Centre, 78-80 Liberty Shopping Hall, East Square. Tel: 0268 27922.
Braintree. Mirage Micros, 24 Bank Street. Tel: 0376 48321.
Chelmsford. Maxton Hayman, 5 Broomfield Road. Tel: 0245 354595.
Colchester. Boots, 5-6 Lion Walk. Tel: 0206 577303.
Colchester. Colchester Computer Centre, 3a Short Wyre Street. Tel: 0206 47242.
Grays. H. Reynolds, 79 Orsett Road. Tel: 0375 5948.
Harlow. Harlow Computer Centre, 17 Staple Tye. Tel: 0279 22846.
Hornchurch. Comptel Computer Systems, 112a North Street. Tel: 0402 446741.
Ilford. Boots, 177-185 High Road. Tel: 01-553 2116.
Romford. Software Plus, 72 North Street. Tel: 70 65271.
Southend-on-Sea. Computerama, 88 London Road. Tel: 0702 335443.
Southend-on-Sea. Computer Centre, 336 London Road. Tel: 0702 337161.
Southend-on-Sea. Estuary Personal Computers, 318 Chartwell North, Victoria Circus Shopping Centre. Tel: 0702 614131.

GLOUCESTER

Cheltenham. Screen Scene, 144 St. Georges Road. Tel: 0242 528979.
Gloucester. Boots, 38-46 Eastgate Street. Tel: 0452 423501.

HAMPSHIRE

Basingstoke. Boots, 15 Old Basing Mall. Tel: 0256 51611.
Bournemouth. Boots, 18-20 Commercial Road. Tel: 0202 21713.
Fareham. Electronequip, 36-38 West Street. Tel: 0329 230670.
Fareham. Boots, 21 Westbury Mall. Tel: 0329 232011
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Portsmouth. RDS Electrical (Portsmouth) Ltd, 157-161 Kingston Road. Tel: 0705 812478.
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Southampton. Boots, 23-29 Above Bar Street. Tel: 0703 333983.
Waterlooville. GB Microland, 7 Queens Parade, London Rd. Tel: 0705 259911.

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Stevenage. DJ Computers, 11 Town Square. Tel: 0438 65501.
Watford. SRS Microsystems, 94 The Parade, High Street. Tel: 0923 26602.
Welwyn Garden City. DJ Computers. 40 Fretherne Road. Tel: 96 28444

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Beverley. Computing World, 10 Swabys Yard, Dyer Lane. Tel: 0482 881831.
Grimsby. R.C. Johnson Ltd, 22 Friargate, River Head Centre, Tel: 0472 42031.
Hull. Boots, 48-58 Prospect Centre. Tel: 0482 22334.
Hull. Computer Centre, 26 Analby Road. Tel: 0482 26297.

ISLE OF MAN

Douglas. T.H. Colebourn, 57-61 Victoria Street. Tel: 0624 73482.

KENT

Ashford. DGH, 10 North Street. Tel: 0233 32597.
Beckenham. Supa Computers, 425 Croydon Road. Tel: 01-650 3569.
Bromley. Boots, 148-154 High Street. Tel: 01-460 6688.
Chatham. Boots, 30-34 Wilmott Square, Pentagon Centre. Tel: 0634 405471.
Gravesend. Gravesend Home Computers, 39 The Terrace. Tel: 0474 28871.
Folkstone. Boots, 24-26 Sandgate Road. Tel: 0303 54007
Maidstone. Boots, 56-62 King Street. Tel: 0622 53912.
Maidstone. Kent Micros, 52 Union Street. Tel: 0622 52784.
Rainham. Microway Computers, 39 High Street. Tel: 0634 376702.
Sevenoaks. Ernest Fielder Computers, Dorset Street. Tel: 0732 456800.
Shortlands. The Village House of Computers, 87 Beckenham Lane. Tel: 01-460 7122.
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Tunbridge Wells. Boots, 7-11 Calverley Road. Tel: 0892 26486.
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LANCASHIRE

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Blackpool. Blackpool Computer Store, 179 Church Street. Tel: 0253 20239.
Bolton. Computer World UK, 208 Chorley Old Road. Tel: 0204 494304
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Rochdale. Boots, 50 Market Way. Tel: 0706 53225.

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Leicester. Boots, 30-36 Gallowtree Gate. Tel: 0533 21641.
Leicester. DA Computers 104 London Road. Tel: 0533 549407.
Market Harborough. Harborough Home Computers. 7 Church Street. Tel: 0858 63056.

LONDON

W1. Computers of Wigmore Street, 104 Wigmore Street. Tel: 01486 0373.
W1. Galaxy. 230 Tottenham Court Road. Tel: 01-636 6500.
W1. Sonic Foto Micro Center, 256 Tottenham Court Road, Tel: 01-580 5826.
W1. Tomorrows World Today, 27 Oxford Street. Tel: 01-439 7799.
WC1. Transam Micro Systems, 59-61 Theobalds Road. Tel: 01-405 5240.
W8. Boots, 127a Kensington High Street. Tel: 01-937 6882.
SE7. Vic Oddens Micros, 6 London Bridge Walk. Tel: 01-403 1988.
SE15. Castlehurst Ltd, 152 Rye Lane, Peckham. Tel: 01-639 2205.
EC2. Devron Computer Centre, 155 Moorgate. Tel: 01-638 3339.
N14. Logic Sales, 19 The Bourne, The Broadway, Southgate, Tel: 01-882 4942.
N22. Boots, 38-40 High Road, Wood Green. Tel: 01-881 0101.
NW4. Davinci Computer Store, 112 Brent Street, Hendon. Tel: 01-202 2272.
NW4. Boots, Brent Cross Shopping Centre. Tel: 01-202 5256/7.
NW11. Computers Inc, 86 Golders Green. Tel: 01- 209 0401.

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Altrincham. Boots, 13-17 George Sreet. Tel: 061-928 4471
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Manchester. Mighty Micro, Sherwood Centre, 268 Wilmslow Road, Fallowfield. Tel: 061-224 8117.
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Marple. Marple Computer Centre, 106 Church Lane. Tel: 061-449 9933.
Oldham. Home & Business Computers, 54 Yorkshire Street. Tel: 061-633 1608.
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St Helens. Microman Computers, Rainford Industrial Estate, Mill Lane, Rainford. Tel: 0744 885242.
Southport. Boots, 31-39 Chapel Street. Tel: 0704 33907.
St. Helens. Boots, 8 Church Street, 24 La Grange Arcade. Tel: 0744 25488.

MIDDLESEX

Harrow. Camera Arts, 42 St. Anns Road, Tel: 01-427 5469.
Hounslow. Boots, 193-199 High Street. Tel: 01-570 0156.
Southall. Twillstar Computers Ltd, 7 Regina Road. Tel: 01-574 5271.
Teddington. Andrews, Broad Street. Tel: 01-977 4716.
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Uxbridge. JKL Computers, 7 Windsor Street. Tel: 0895 51815.

NORFOLK

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Edinburgh. Edinburgh Computers, 51-57 Lothian Road. Tel: 031 229 4418.
Edinburgh. Silicon Centre, 7 Antigua Street. Tel: 031 557 4546.
Glasgow. Boots, 200 Sauchiehall Street. Tel: 041 332 1925.
Glasgow. Microworld Computer Group, 11 Bath Street. Tel: 041 332 1116.
Glasgow. Boots, Union Street and Argyle Street. Tel: 041 248 7387.
Glasgow. Tom Dixon Cameras, 15-17 Queen Street. Tel: 041-204 0826.
Glasgow. Commscot Ltd, 30 Gordon Street. Tel: 041 226 4878.
East Kilbride. Boots, 33-37 The Plaza. Tel: 035 52 20629.
Falkirk. Boots, 79-91 High Street. Tel: 0324 20535.
Hamilton. Tom Dixon Cameras, 8 Cadzou Street. Tel: 0698 283193.
Peterhead. North East Computers. 1 Ellis Street. Tel: 0779 79900.

SHROPSHIRE

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Telford. Computer Village, 2/3 Hazeldine House, Central Square. Tel: 0952 506771.
Telford. Telford Electronics, 38 Mall 4. Tel: 0952 504911.

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Stoke on Trent. Town Computer Store, 30 Town Road, Hanley. Tel: 0782 287540.
Stoke on Trent. Boots, 3-5 Market Square, Hanley. Tel: 0782 23271.

SUFFOLK

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Bury St. Edmunds. The Suffolk Computer Centre, 1-3 Garland Street. Tel: 0284 705503.
Ipswich. Computer Magic, 24 Crown Street. Tel: 0473 50965.

SURREY

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Croydon. The Vision Store, 53-59 High Street. Tel: 01-686 6362.
Croydon. Boots, The Mall, 12-18 Whitgift Centre. Tel: 01-688 6021.
Epsom. The Micro Workshop, 12 Station Approach. Tel: 0372 721533.
Guildford. Guildford Computer Centre, 5 The Quadrant, Bridge Street. Tel: 0483 578848.
Wallington. Surrey Micro Systems, 53 Woodcote Road. Tel: 01-647 5636.
Woking. Harpers, 71-73 Commercial Way. Tel: 0486 225657.

SUSSEX

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TYNE & WEAR

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Newcastle-upon-Tyne. RE Computing, Parkview House, Front Street, 4 Lane Ends. Tel: 091 2701740.
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WALES

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Aberystwyth. Aberdata at Galloways, 23 Pier Street. Tel: 0970 615522.
Cardiff. Boots, 36 Queens Street & 105 Frederick Street. Tel: 0222 31291.
Cardiff. The Computer Shop, 41 The Hayes. Tel: 0222 26666.
Cardiff. Cardiff Microcomputers, 46 Charles Street. Tel: 0222 373072.
Newport. Gwent Computers, 92 Chepstow Road. Tel: 0633 841760.
Newport. Boots, 155-156 Commercial Street. Tel: 0633 51212.
Swansea. Boots, 17 St. Marys Arcade, The Quadrant Shopping Centre. Tel: 0792 43461.
Swansea. The Micro Store, 35-36 Singleton Street. Tel: 0792 46980.

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Leamington Spa. Boots, 31 Parade. Tel: 0926 24945.
Leamington Spa. Leamington Hobby Centre 121 Regent Street. Tel: 0926 29211.
Nuneaton. Micro City, 1a Queens Road. Tel: 0203 382049.
Rugby. O.E.M., 9-11 Regent Street. Tel: 0788 70522.

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Huddersfield. Boots, 22 King Street. Tel: 0484 21756.
Leeds. Boots, 19 Albion Arcade, Bond Street Centre. Tel: 0532 33551.
Leeds. Micro Power, Northwood House, North Street. Tel: 0532 458800.
Sheffield. PIP Micro Communications, 9 Taptown Crescent, Broomhill. Tel: 0742 661096.
Sheffield. Boots, 4-6 High Street. Tel: 0742 78333.
Wakefield. Boots, 26-28 Upper Kirkgate. Tel: 0924 376181.
York. York Computer Centre, 7 Stonegate Arcade. Tel: 0904 641862.



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Micronet 800, 8 Herbal Hill, London EC1.

Random letters

***Dear Tommy*, Having got totally lost in numerous adventures and shot in various arcade games, I thought it was time to start learning Basic. I have bought various books and read your magazine with interest. Now, my question.**

It's easy getting random numbers between say 1-100 etc., but how do you get random letters from one word?

In other words, can you print a program that will list all the words from a longer word e.g. COMMODORE — words code, cod, more, door etc.

I await your response, eagerly.

This letter is typical of a number I have received, all asking basically the same question. While it is fairly easy to produce random letters from a word, it is much more difficult to produce random words. Since the computer has now way of knowing what is a valid word and what isn't (at least, not without a very large dictionary) the best that you can do is to dump all the combinations of, say, three or more letters.

Thus from the word COMMODORE, not only will you get COD, MORE etc, but also RDOE, MMRC and COOO etc! It will then need a human brain to sort out all the valid ones. The problem is the sheer number of combinations if you go down to three letter words. Would you believe that there are 2,540,160 groups of three or more letters from the word Commodore (and I bet not more than about 50 are valid ones!)

Assuming you printed eight words to a line and 66 lines to a page, you would use up 4810 pages and even an Epson FX-80 would take over 44 hours to print it, not to mention how long it would take you to check it.

I freely admit I spent some time working out a program to do it before the enormity of the task dawned. I think you will be better off trusting to the old brain cells — there are *still* some things a human can do better than a computer!

If what some of you want is just the ability to select single random letters from a given word then the following short piece of code will do just that:

```
98  REM EACH PRESS OF
SPACE BAR WILL
GENERATE ONE
RANDOM LETTER —
RETURN WILL
99  REM SEPARATE THE
WORDS — RUN/STOP
WILL HALT THE
PROGRAM.
100 X$ = "COMMODORE"
110 LS = LEN(X$)
120 P = INT(1 + RND(1)*LS)
130 GETS$: IF S$ = CHR$
(13) THEN PRINT
135 IF S$<>" " THEN 130
140 PRINT MID$(X$,P,1);
150 GOTO 120
```

Faster load?

***Dear Tommy*, I have owned a Vic for about two years now, and thus have spent many an hour making use of the (almost) excellent VIC chip. To do this with any effect I of course had to resort to machine-code.**

When, earlier this year, my brother got a Commodore 64, I progressed onto it's VIC chip, and so I needed an assembler/disassembler. After careful consideration I fell for the Machine Lighting package from Oasis software. This I chose not only for its powerful assembler/disassembler, but because for just £26.95, I also got an extremely powerful Basic lightning extension including multi-tasking.

I have one complaint about this, it's inability to load very quickly. Could you give me some advice on converting this to a cartridge if that is at all possible.

Theoretically there is no reason why you cannot copy any program on to an EPROM (erasable and programmable ROM) and use it as a cartridge. In practise it is not quite that simple. Firstly you have to be able to copy the program; which for commercial software in this day and age is not only very difficult but illegal. Secondly, you must know exactly where in memory all the various component parts of the machine-code are stored.

To make up a cartridge you must possess an EPROM programmer system, and locate the EPROM address so as not to clash with the program you are trying to save. Even if you manage that, the program will still not work if it has not been written in relocatable code; you will have to transfer the non-relocatable parts from the EPROM back to the correct address before the program can run if this is the case (this can of course be done as part of the start-up routine).



Tommy is our resident know-all. Whether you've got a technical problem on the 64, 16 or Vic, Tommy's at the ready with pearls of wisdom, advice and information. Go on, write to him: Tommy's Tips, Commodore User, 30-32 Farringdon Lane, London EC1R 3AU.

If you feel confident to try it, Zero Electronics do an EPROM programmer system for both the Vic and the 64. Costs are around £38-50 for the hardware, £9 for the relevant driver software in ROM, and the EPROMS vary between £4 for a 2k to £18 for a 16k. There's also a cheaper device from Lightwave Leisure which we're reviewing next month.

You will also need at least one EPROM card to mount the EPROMS to use them as a cartridge; these cost £13 each. For anyone interested in creating cartridges from programs they have written themselves, this is quite a useful system. However, if you want to erase an EPROM (to correct a bug or change the program on it) then you will also need an EPROM eraser; around £33! Phew, that's a lot of money.

Pokes for 16

***Dear Tommy*, I have been entering Vic 20 programs on my Commodore C16 with limited success. All is well until I come to the pokes. Is there an equivalent poke on the C16 to Vic 20's 36876?**

Programs written for the Commodore 64 or Vic 20 can be made to run on a C16 without too much difficulty providing they are written in Basic. The problem with POKE and PEEK is that they store and retrieve numbers directly from the machine's memory. In itself this is not a problem, but they are generally used to put graphics on the screen or to produce sound and music.

In the Vic, the chip that controls these functions is the VIC chip and is located in memory from address 36864 to 37135. The reason these pokes don't work on the 16 is that the chip controlling sound and video output is mapped to a different memory location.

The particular POKE you mention sets the relative frequency of sound oscillator 3 in the VIC chip. In other words it produces a tone provided the oscillator is first enabled with POKE 36876, PEEK (36876), OR128. If you're not too bothered about sound in your program you could just leave it out. On the other hand the C16 has excellent facilities for producing sound and it's a shame not to take advantage of them. The following line of Basic will produce a one second tone: vol8:SOUND1, 810,60.

Pot pins

***Dear Tommy*, I have two questions about various subjects on the Commodore 64:**

1) Is it possible to turn off the screen interrupt while loading or saving with a disk drive and would this speed up the data transfer.

2) One day while flicking through the manual, I came to the page with the functions of the various pins of the joystick port. I noticed the words 'POT AY'

and 'POT AX' on pins 5 and 9, respectively. Fascinated, to find out what they were, I had a look at the end of the joystick socket. But, I found that they were blanks. I would be most interested to find out what they do, and if anything does use them.

Blanking the screen to the border colour can be achieved by POKE 53265, PEEK (53265) AND239. If you enter this in immediate mode, you can still type commands on the (now blank) screen, but you won't be able to see what you are doing. To re-enable the screen, either use RUN/STOP and RESTORE, or POKE53265, PEEK (53265)OR16. But that won't solve your problem.

As data transfers to and from disk occur normally at 300 baud, the only way to speed up disk operation is to raise the baud rate. There are commercial programs available that accomplish this, offering speed increases of up to five times at 1200 baud.

The pins marked 'POT AY' and 'POT AX' are the 64's analogue inputs. These inputs are normally used for paddles (up to 4 paddles can be used, 2 on each port), but are also used by graphics 'Touchpads' such as the Koalapad. The reason the relevant pins are blank on your joystick's plug is simply that they are not used by a joystick.

Read your data

***Dear Tommy*, I'm fairly new to the world of computers so this question may seem very simple to you and your more advanced readers.**

How can I get a program to READ a particularly line or lines of DATA?

In the program in question I've got team names stored in DATA:

1000 REM ** 1ST DIV TEAMS **
1010 DATA
1020 DATA
1100 REM ** 2ND DIV TEAMS **
1110 DATA
1120 DATA
1200 REM ** 3RD DIV TEAMS **
1210 DATA
1220 DATA

The main menu asks the user to select 1st DIV, 2nd DIV or 3rd DIV. So if 3rd DIVISION is selected the DATA in lines 1200-1220 needs to be read but I can't get it to do so. The DATA in lines 1000 — is always accessed.

I've tried several different methods but to no avail, the Commodore 64 Programmers Reference Guide doesn't seem to touch on this. Please can you help. Thanks.

There are two ways of doing this; one way is to declare arrays into which you read all the team names at the start of the program, keeping the totals of each Division in variables. Then, when you want to access a given division you use a simple calculation to work out where to start reading from the array (the variable will also act as a loop total so that you stop at the right point too). **Program One** illustrates the method.

The second way is to do dummy reads on the data until you get to the place you want and then start reading the team names. This is illustrated in **Program Two**.

This method is not very efficient if you are constantly jumping about in the list of teams; with the array method you can access any team immediately if you know its position and in which Division it is. The only other possible way is to use a m/c 'wedge' and to add a command to BASIC to give you the ability to RESTORE to a given line number; this would be the most efficient (provided you also stored the line number of the start of each Division's DATA), but would still not give you the flexibility of jumping immediately to any single team.

16k for Vic

***Dear Tommy*, I have a question concerning the Vic 20. I have a 16K (& 3K) expansion, is there a simple way to run unexpanded games by converting them?**

There is no need to convert the programs; before loading them in just type the following pokes to change the memory configuration, for unexpanded programs simply type:

POKE642,16:POKE644,30:
POKE648,30:SYS64824.

And for 3K expanded programs, type:

POKE642,4:POKE644,30:
POKE648,30:SYS64824

Note that in order to run programs requiring 3K, you **must** have a 3K RAM pack installed (or a combination cartridge that gives both 3K and 8K at the same time), otherwise you will be left with a big hole in the memory. A 16K RAM pack on its own will not fill the memory area needed for the 3K expansion.

Expanded Vic?

***Dear Tommy*, I have a 16/27k expanded Vic and am writing a program which requires the top line of the screen to be 'locked' so it can't be overwritten or scrolled. I also need to be able to 'unlock' it to rewrite the message there.**

In page 180 of the 'Vic Programmers Reference Guide', it says that locations 217-240 is the screen link table and that poking a '158' in this location effectively 'locks' the corresponding line on the screen. This works fine on the unexpanded Vic but once the memory is expanded past 8K, my program is destroyed after using this 'poke'.

As this is for an 'O' level project, please could you help me?

Once the Vic is expanded beyond 8K, the location of the screen alters; this in turn means that the values for the screen link table also change. The values change by -14, i.e. whatever number you use to lock and unlock a line on the unexpanded Vic, subtract 14 from that number and that is the value to use on the expanded Vic.

Since this is the case, you could incorporate some code to check on the memory size and then set variables with the correct values as required. The program would then run on any size Vic without having to be altered.

Program One

```
10 READTD:DIMDV(TD):DIMTN$(TD*15):TL=0
20 FOR LOOP=1 TO TD
30 READ DV(LOOP)
40 FOR DN=1 TO DV(LOOP):READTN$(DN+TL):NEXT DN
50 TL=TL+DN-1:NEXT LOOP
60 INPUT"WHICH DIV";WD
70 IF WD<1 OR WD>TD THEN PRINT"NO SUCH DIV":GOTO60
80 SP=0:FOR LOOP=0 TO WD-1
90 SP=SP+DV(LOOP):NEXT LOOP
100 FOR LOOP=SP+1 TO SP+DV(WD)
110 PRINTTN$(LOOP):NEXT LOOP
120 GOTO60
1000 DATA 3 : REM NO OF DIVS
1010 REM *** DIV 1 ***
1020 DATA 10,T11,T12,T13,T14,T15,T16,T17,T18,T19,T110
1030 REM *** DIV 2 ***
1040 DATA 12,T21,T22,T23,T24,T25,T26,T27,T28,T29,T210,T211,T212
1050 REM *** DIV 3 ***
1060 DATA 14,T31,T32,T33,T34,T35,T36,T37,T38,T39,T310,T311,T312,T313,T314
1070 REM FIRST NUMBER OF EACH DATA LINE IS NUMBER OF TEAMS IN THAT DIV.
1080 REM IT IS ONLY NEEDED AT THE START OF THE FIRST DATA LINE FOR EACH DIV
1090 REM IF USING MULTIPLE DATA LINES.
```

Program Two

```
10 INPUT"WHICH DIV";WD
20 IF WD<1 OR WD>3 THEN PRINT"NO SUCH DIV":GOTO10
30 READ DN
40 IF DN=WD THEN GOTO 70
50 READ LT:FOR LOOP=1 TO LT:READ TN$:NEXT LOOP
60 GOTO 30
70 READ LT:FOR LOOP=1 TO LT
80 READ TN$:PRINT TN$
90 NEXT LOOP
100 RESTORE:GOTO 10
1000 REM DATA STATEMENTS AS PROGRAM 1 LINES 1010 TO 1060, BUT ADD THE DIV NO
1010 REM IN FRONT OF THE NUMBER OF TEAMS (EG 1010 DATA 1,10,T11,ETC...)
```

128 means business?

An overview of CP/M on the C-128

Apart from its better Basic, one of the more attractive features of the new C-128 is its ability to run the CP/M operating system — using its extra processor. But what exactly is CP/M and will the wealth of CP/M business and utility software actually run on the 128? We explain all, and check out the major packages.

by Cheryl Peterson

It's a pity, but most Commodore users won't be impressed by the C-128 running CP/M. Why? Because they don't know what CP/M is or why it's attractive. For long-time CP/M users though, there's no question that running CP/M makes the C-128 twice the computer that the Commodore 64 was.

What is CP/M?

CP/M is sometimes called a Disk Operating System (DOS), but is actually much more than that. CP/M controls communications between all the parts of a computer; CPU (Central Processing Unit), disks, monitor (Console), keyboard, and serial or parallel devices attached to the system.

A CP/M computer runs in a very much different way to a Commodore 64. Rather than loading Basic when you first boot it up, a CP/M computer loads in the operating system. This system initializes all the communications between the parts and enables a few basic DOS commands; SAVE, LOAD, DIR, TYPE, ERA, and REN. Some of these have equivalents in Basic, the rest don't. SAVE and LOAD are similar to their Basic counterparts. DIR displays a directory, TYPE prints a file out on the screen, ERA erases a file and REN renames a file.

One of the most convenient features of CP/M is the command to change drives. All the drives in a CP/M system are identified by a letter (typically A through to N). The system boots up on the A drive and will access any programs on that drive by typing the program's name. If you wish to use a program on another drive, you merely preface the filename with the letter of the drive and a colon. (This is similar to the Commodore's adding a comma and the drive number after the filename.)

With CP/M though, you can also easily change the default drive; the drive where CP/M looks for the program. By typing the letter of the drive you want and a colon, CP/M will look for programs on the new drive without having to type the drive identifier each time. It's just as easy to go to another drive or back to the first. Since most CP/M systems have at least two drives, this can be a very handy feature.

Disk drives

The 128 without a disk drive is totally useless in CP/M mode, but for those who already own 1541 disk drives, good news! The 128 performs with the old drives. The 1541 is half as fast and has half the storage space of the new, faster and double-sided 1571, but it does work.

The 1541 has one big limitation though; it will only *read* Commodore CP/M format disks. This means that until you buy a 1571 or until software manufacturers get 128s and reformat their products, you won't be able to read non-Commodore CP/M format disks. Using a 1541 doesn't seem like a headache, until you find out what the 1571 can do! Besides the greater storage capacity, the 1571s really are *much* faster.

The Commodore CP/M system is initially configured in the same way as an Osborne 1 portable computer. Though some Commodore sources are saying the 128's CP/M mode most resembles the Kaypro computers, my experience shows otherwise. The Osborne software (both commercial and public domain) that I have tried to use has run flawlessly.

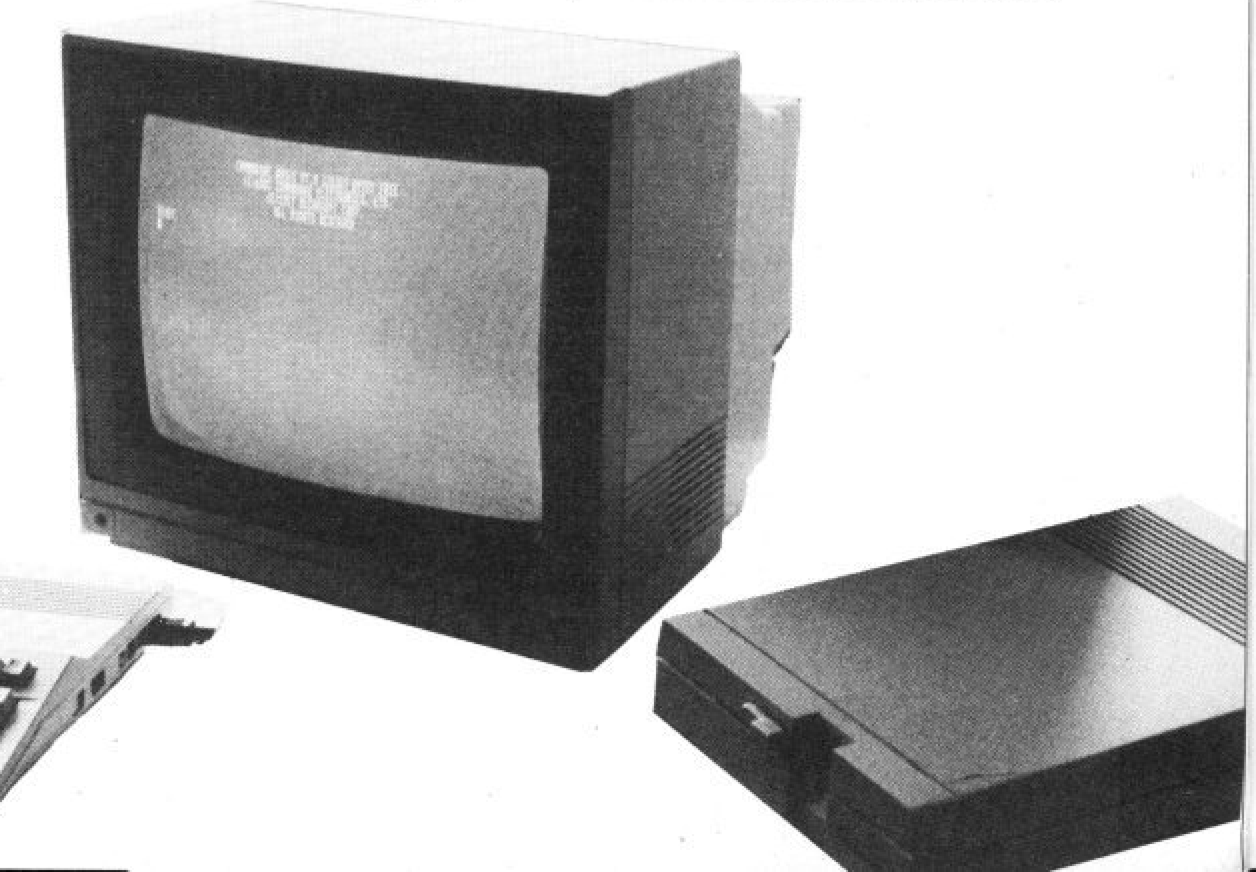
The only requirement is that the software be stored on an Osborne double-density disk. Originally Osborne 1 came with single density disk drives. About a year after introduction, a double density upgrade became available and Osborne started selling 01's with double density drives as standard equipment. The 1571 will not read single density disks, so CP/M software for the 128 must be in double-density format software.

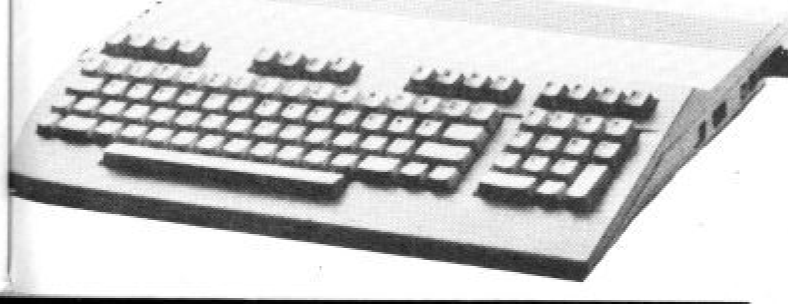
CP/M utilities

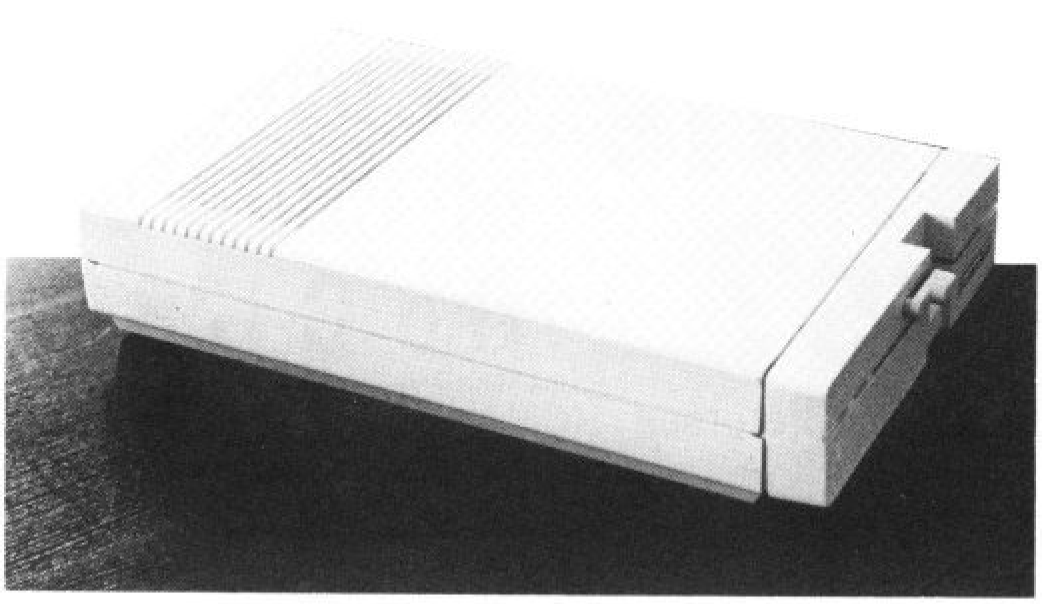
CP/M comes with a group of utility programs that peform many of the functions of a DOS wedge program. These are run by typing their names. STAT, PIP, ED, DUMP AND SUBMIT are some of them. In addition, utilities to format and copy disks are usually provided.

A separate utility called SYSGEN is usually included to put the CP/M system onto the disk you use. The CP/M System is actually two programs that auto-boot when the 128 is turned on. The files are only needed on disks that are used to boot the system.

STAT or the status command reveals information about drives and other devices and the files located in them. The PIP command is used to move files from one device to another. ED is probably the most primitive text editor ever created, but it is







1571 disk drive: double sided disks and increased speed.

functional and there are rumours people actually use it occasionally. DUMP does a hexidecimal print out of a file to whatever device is specified, typically the screen or a printer. SUBMIT strings together a group of commands to be carried out in an orderly fashion. This allows the user to create a "program" that is nothing more than a series of CP/M commands.

CP/M on the 128

Typically CP/M is sold with an assembler and a programming utility called DDT. The 128 does not include these. It does however come with a macro assembler. Additional help is offered via a manual (CP/M Plus User's Guide) that is being sold for about £20. A coupon for its purchase is included with the users manual. As with the Commodore 64, for only £20 you can find out how to program and use your machine. The User's Guide purchase includes two additional disks of CP/M utilities.

Sadly, the amount of CP/M material in the Commodore 128 System Guide (manual provided with the computer) is minimal. For an experienced CP/M user, it is only slightly puzzling. For long-time Commodore users, with little CP/M knowledge, it will take a while to puzzle it out. Especially since at least one vital command is improperly written in the manual.

Unfortunately, typing the PIP command **PIP B:=A:*,*** (as presented in the manual) will get you nothing but a syntax error message. It should read **PIP B:=A:*.*** Though the difference between a comma and a period seems small, in CP/M it means the difference between doing something useful and spinning your wheels.

There are a few other slight inconsistencies in the documentation, but there shouldn't be a problem for those who have some idea of how computers work.

Compatibility Problems

As mentioned earlier, the 128 emulates an Osborne 1 computer. In most cases, Osborne (or Kaypro with slight modification) software will run without problems. There ae a few exceptions however. Any program (one called VDO springs to mind) that uses direct cursor addressing won't work. Because the screen memory is located at a different address on almost every CP/M computer, few programs that bypass the Kernal and put information straight on to the screen will work.

Another incompatibility relates to the BIOS (Basic Input/Output System); what Commodore users would call the Kernal. Some CP/M programs use direct calls to the BIOS, similar to using the Kernal routines directly in the 64 or Vic-20. When these programs are run on a machine other than the one they were intended for strange things can happen. Be careful!

Most software houses that distribute their programs on a number of different machines, doesn't use direct BIOS calls because it makes it more difficult to modify the software to run on new machines. Some public domain software may be listed as running on a specific computer, usually this means that it may not run well with others. It's best to find out before you try to run the software.

Public domain software

Public domain won't be new to most Commodore users who are aware of the many good "free" programs available for the 64. There are thousands of such programs available for CP/M computers. Everything from statistical packages to checkbooks and text editors. Most are available through user groups and electronic bulletin boards called RCP/Ms (Remote CP/M boards).

In fact, one of the most popular CP/M public domain programs is XMODEM, written by Ward Christensen. He and a friend needed a way to communicate over phone lines using modems and assure that the transfer was received correctly. This communication protocol is the most frequently used to download programs from RCP/Ms and other electronic bulletin boards. With its built-in error checking, XMODEM has become the de facto standard for file transfers between computers using telephone lines. Most commercial terminal packages support XMODEM protocols.

Another very popular public domain program that is sometimes provided with CP/M computers is XDIR or extended directory. This program lists all the files on the chosen drive, how many files there are, how much disk space is used and how much is left. Sometimes this program masquerades under the name X. Although X seems to work OK on the 128, the numbers for total disk space used and space left are wrong. The space available on the Commodore disks is non-standard.

Another very popular public domain program is called VDO. It is a text editor that only occupies 4K of space on a disk. For its size, it is a very powerful program. Unfortunately, it uses direct cursor addressing, so it won't run on the 128 without first being modified. □

Here's a list of the commercial and public domain software running under CP/M that we've tried on the 128. We've given the name of the program, the software house that produces it and the machine format used.

Name	Source	Format	Works
WordStar	Micropro	Osborne 1	Yes
WordStar	Micropro	Kaypro IV	Yes*
SuperCalc	Sorcim	Osborne 1	Yes
dBase II	Ashton Tate	Osborne 1	Yes
Spellguard	Sorcim	Osborne 1	Yes
Electric Webster	Cornucopia	Osborne 1	Yes
The Word Plus	Oasis Sustems	Osborne 1	Yes
Punctuation & Style	Oasis Systems	Osborne 1	Yes
Grammatik	Aspen	Osborne 1	Yes
Disk Doctor	SuperSoft	Osborne 1	Yes
MBASIC	MicroSoft	Osborne 1	Yes
WASH	PD	Osborne 1	Yes
X	PD	Osborne 1	Yes**
VDO	PD	Osborne 1	No
UNERA	PD	Osborne 1	Yes
VIDTYP	PD	Kaypro 2	Yes
ADVENTUR	PD	Osborne 1	Yes

*The Kaypro version appeared to function correctly, but the screen display was formatted wrongly.

**As mentioned, the space used and space remaining totals were incorrect.

TOP TEN DATABASES

Choosing a filing package for your 64

This month we start a new three-part Buyer's Guide for business software on the Commodore 64. How do you choose a database, wordprocessor or spreadsheet from the huge number now available? Starting with databases, we introduce the subject and list our own Top Ten.

by Karl Dallas

Choosing a database

The old adage, that you get what you pay for, is particularly true of databases — or, as I prefer to call them, information retrieval systems, (a true database being a central store of information which various users can dip in and out of at will).

However, it doesn't necessarily mean that the dearer programs will be most suitable for your purposes. For instance, if yours is a fairly modest requirement — a membership list for a medium-size organisation, say — then the excellent £5.95 cassette-based **Mini-Office**, which also includes modest word-processor, spreadsheet and some graphics, might be more than adequate.

And since it does all its data manipulation within memory, rather than constantly having to access the notoriously slow 1541 disk drive, it is actually faster than some more sophisticated, more expensive systems.

The effect that disk hardware can have on data access times can be gauged by the fact that Precision Software reckon that the up-coming C128 version of their very excellent **Superbase** will take just 0.3 of a second to find a record on the faster 1571 disk drive — that's ten times faster than the still quite speedy three seconds taken by the C64 version of the program, working with the 1541.)

So if your needs are modest, then go for a program that works within the confines of the computer's memory.

● **The jargon:** First a word about terminology. A FILE is a collection of RECORDS, rather like the cards in an index box. Some programs actually call such records cards, for that reason. Each record consists of a number of FIELDS (called items in some programs), which are given titles like Last Name, First Name, Telephone, Balancing Owing and so on, which are the FIELD-NAMES or FIELD-LABELS.

The stuff you type into the fields is called DATA, which may be alphabetical, numeric, or alphanumeric (a mixture of letters and figures). Other possible field categories are date (usually allowing only the dd/mm/yy format, though sometimes yy/mm/dd is required — because it's easier to sort, numerically — or the American-style mm/dd/yy may be required) or formulae (for performing calculations).

●**Cassette or disk?** Despite the superb value-for-money of Mini-Office, the fact that it's cassette-based is a distinct turn-off, though unless you'll be working on several files, one after the other, all that should mean is a coffee break at the beginning and end of each work session, while the data is LOADed and reSAVEd. Of course, cassette files don't allow any kind of random access to tape, though as long as there's enough room in memory for sorting, modifying etc, the user shouldn't be too aware of this limitation.

The other parameters which should govern your choice will be the limitations upon file size: how many records per file, how many fields per record, how many characters per field, how many characters per record?

Some records can be spread across multiple screens (32, in one case) which is handy if each record is likely to contain considerable data, either text or records of accounts, for instance.

● **Stop and Search** Most programs will allow searching on one or more fields to find what you are looking for. The more sophisticated permit the use of multiple-key searching, so that you can find all unmarried men or women under 30 who drive Porsches and live in West London. Others may require you to search in diminishing order: men or women first, all those under 30, then all those under 30 with a W postcode, then car-owners, finally those who own a Porsche. This can take rather longer than one single, multi-key search.

● **Calculations:** If you are going to use the database for any financial or mathematical data, then make sure it is possible to perform calculations upon the fields, so that if you type in a net or gross figure, the VAT can be calculated for you, for instance. There should also be an override facility, of course, to handle non-VAT items.

● **Wild-cards:** If you are searching on a text field, how exact do you have to be? Can it handle "wild-cards", so that searching for M* will turn up all records beginning with M, or M?m will find all occurrences of three-letter words beginning with M and finishing with m? Are capitals significant? If you're searching on text fields — and **PFS:file** allows fields of literally thousands of characters — you may want it to treat "The" and "the" as the same word. Some programs won't, though if a wildcard facility is present, then "?he" will find them both.

● **The speed question:** We have resisted setting up any standard benchmark for the speed of data retrieval, because it depends on what kinds of data are being searched for, the size of the records and the file.

Usually, when we quote figures, they are those claimed by the publisher, and so should be treated with reserve.

Some programs allow more than one file to be accessed at a time, which is handy. You might want to update a bank balance on one file while debiting a customer account on another, for instance.

● **Integrating data:** You may want to use the data from within the system in more than one program — a spreadsheet, say, or a word processor. Hence the growth of so-called integrated packages, which range from the modest three-in-one programs like **Mini-Office** and **Triangle** to the database-plus programs like **Vizastar**.

Other programs, like the **Practicorp** range, share a common file structure, so that each can read the other's files. If a program uses straight-forward sequential files, such transfers may be fairly simple, but if more complex random access structures are used (eg by Superbase), then there should be an "import" or "export" facility to read in sequential files produced outside the system or to allow other programs to access the data.

Some spreadsheets use special file formats (eg DIF with Visicalc, SYLK with Multiplan, which while they are sequential, have file-structure information at the beginning which you'll need to strip out before your database can handle them. This is quite easy to do, if you are a programmer, but if you are likely to be transferring data between your database and such a spreadsheet regularly, then a facility to read the files without any special effort on your part will be essential.

The following is our very own database Top Ten ranging from the cheapest cassette-based program to the £100 Superbase package. Relevant specifications are given together with a concise appraisal.

MINI-OFFICE

Price:	£5.95
Distributors:	Thorn-EMI Computer Software, 296 Farnborough Road, Farnborough, Hants GU14 7NF (tel: 0252-543333)
Author:	Database Publications
Format:	Tape
Max no of records per file:	File-structure dependent
Max no of fields per record:	14
Max no of characters per field:	23
Max no of characters per record:	322

A database/spreadsheet/WP package on tape, at a remarkable price, offering quite sophisticated facilities. It is not really integrated — there appears to be no way of transferring data between spreadsheet and database, for instance, though, nor even to incorporate names and addresses from the database into letters generated by the word processor.

It is possible to do a global replace throughout an entire file, changing every *Smith* to *Jones*, and a multiple sort, based on criteria typed into the various fields of the record form.

The program will store about 110 records of a typical length of five fields of 20 characters, but only 40 of the maximum length (14 fields of 23 characters). Works within memory.

TRIANGLE

Price:	£19.95
Distributors:	Argus Press Software Ltd, Liberty House, 222 Regent Street, London W1R 7DB (tel: 01-439 0666)
Format:	Disk
Max no of records per file:	Disk dependent
Max no of fields per record:	17
Max no of characters per field:	29
Max no of characters per record:	230

Disk-based database (file manager) plus spreadsheet and word processor. The main function of the file manager is obviously to act as a mailmerge facility and it is admirably suited for this purpose. Searching on two fields is permitted (field keys may be partial, i.e. the first few letters of the field) but there is no browse facility. Works within memory.



CLIENT FILE SYSTEM

Price:	£27.60
Distributors:	Step One Software, 14 George Street, St. Albans, Herts AL3 4ER (tel: 40145)
Author:	Abraxas Software
Format:	Disk
Max no of records per file:	Disk-dependent (1000 if 127 characters long)
Max no of fields per record:	30
Max no of characters per field:	31 (10 for numeric fields)

One of a series of dedicated programs, all using the same fairly sophisticated database. Others include Collectors System, Stock File System, Repair Shop System, Sales System, Car Dealer System, Roundsman System and Membership System.

A simple wordprocessing with mailmerge facility allows letters to be created within the program and names and addresses incorporated. Up to 26 single-page letters can be stored on the data disk. There is also a reports generator.

The program allows multi-key sorting. Data fields can be in either dd/mm/yy or mm/dd/yy format, or if 99/99/99 is set as a default the program will substitute the day's date. Similarly, if a numeric field is given a default of, say, 999.99, then the decimal point need not be entered. Typing in 12345 will be interpreted as 123.45.

Wildcard "?" supported in searches. Will not search on a numeric field. Disk access reasonably fast. Quite a sophisticated package for the price.

MEGABASE

Price:	£24.95 (tape) £29.95 (disk)
Distributors:	Orpheus (Hallarch Ltd), The Smithy, Unit 1, Church Farm, Hartley St. George, nr Sandy, Beds. SG19 3HP (tel: 0767-51481)
Format:	Tape/disk
Max no of records per file:	File-length dependent — 21000 characters max
Max no of fields per record:	26
Max no of characters per field:	Record-length dependent
Max no of characters per record:	458

Fast, sophisticated file manager working entirely within memory, hence the limited capacity, but it is very fast. "Macro"-programmable, meaning that series of commands to do such things as finding certain information and processing it, can be implemented very easily, and by untrained associates. It utilises a new Basic-like language called *E-file*, which you can examine yourself if you enter an illegal parameter when setting up a file (e.g. more than 26 fields) which will abort the program and allow you to LIST the program.

FIRSTBASE

Price:	£35.95 (disk)
Distributors:	First Publishing Ltd, Unit 20b Horseshoe Road, Pangbourne, Berks (tel: 07357-5244)
Format:	Disk
Max no of records per file:	File-structure dependent
Max no of fields per record:	50
Max no of characters per field:	40
Max no of characters per record:	253

German program supplied with typically thorough documentation (spiral-bound but unindexed.) Quite sophisticated report generation is permitted. The format is ISAM (indexed sequential file), which makes searching, sorting etc. quite fast for a program which has to access disk frequently, since only the index is manipulated, the actual data file being added to the end in the normal sequential manner. Wildcard "*" supported in searches.

Multiple-key sorting is supported. Though the same company produces a word processor, there does not appear to be any mailmerge link between them.

AD INDEX

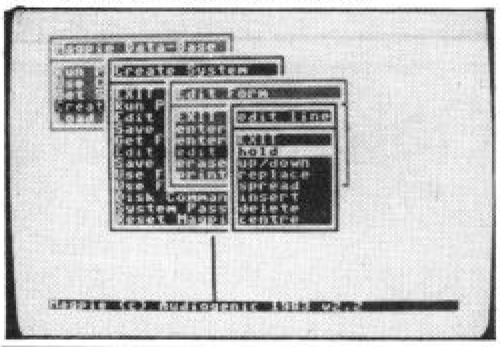
MICRO MAGPIE

Price:	£39.95
Distributors:	Audiogenic, PO Box 88, 34-36 Crown Court, Reading, Berks RG6 1AZ (tel: 0734-664646)
Format:	Disk
Max no of records per file:	File-structure and disk-dependent
Max no of fields per record:	52 (26 alpha, 26 numeric)
Max no of characters per field:	255
Max no of characters per record:	6240

Perhaps the ideal combination of user-friendly easy-to-learn package plus sophisticated capabilities for the more experienced user, this was originally a cartridge-based program selling at nearly £100, but now made more powerful in a cheaper disk-based package.

It uses a system of pull-down menus giving the user a choice of options at every stage, making the excellent manual almost redundant. The disk include a simple mailing list and more complex stock control, with invoice, purchase orders and credit note processing.

The way in which macros (here called procedures) can be programmed, also using the pull-down menus, is remarkably easy, allowing the user to set up quite complex operations very easily.



PRACTIFILE

Price:	£44.50 (£59.95 with Practicalc 64)
Distributors:	Practicorp, Goddard Road, Whitehouse Industrial Estate, Ipswich, Suffolk IP1 5NP (tel: 0473-462721)
Format:	Disk
Max no of records per file:	3800
Max no of fields per record:	20
Max no of characters per field:	79
Max no of characters per record:	254

One of a series of linked programs — the others are the spreadsheet *Practicalc 64* and the spreadsheet/word processor *Practicalc II* — this claims to sort records in one second flat, and is certainly sophisticated, allowing calculation of up to five sub-totals within files. There are the usual mailmerge and report generation facilities, and data can be specially rearranged to print out mail labels. Wildcard "*" supported in searches.

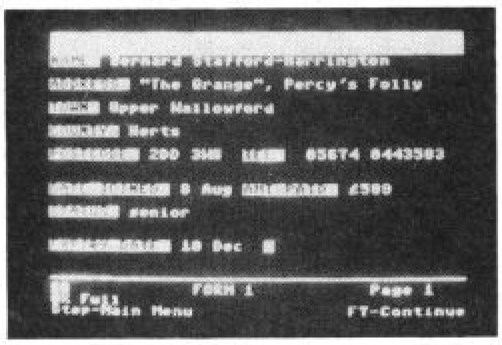
PFS: file/PFS: report

Price:	£83.95/£73.60
Distributors:	P&P Micro Distributors Ltd, Todd Hall Road, Carrs Industrial Estate, Haslington, Rossendale, Lancs BB4 5HU (tel: 0706-217744)
Format:	Disk
Max no of records per file:	Approx 1000 (disk dependent
Max no of fields per record:	50 per screen
Max no of screens per record:	32
Max no of characters per field:	30720 (disk-dependent)
Max no of characters per record:	30720 (disk-dependent)

Famous from its implementation on IBM-type machines (including, of course, Commodore's own PC10 and PC20), this may seem rather expensive, but it is really sophisticated, especially if you are typing in great reams of text and want to search through the entire file looking for a particular keyword or words, since each record can consist of up to 32 screens.

Disk space does not have to be reserved for the full complement of data, since variable record lengths are supported. PFS: file has quite sophisticated report generation, but PFS: report adds a great deal, including allowing up to eight user-defined report formats to be stored for each file. Partial-field searches supported, with "?" wildcard.

Despite its power, this is a very easy program to use, partly because the documentation is so good.



VIZASTAR

Price:	£99.95 (8k ROM version £129.95)
Distributors:	Viza Software, 9 Mansion Row, Brompton, Gillingham, Kent ME7 5SE (tel: 0634-813780)
Format:	Disk plus ROM cartridge
Max no of records per file:	1200 (on 1541 disk)
Max no of fields per record:	64
Max no of screens per record:	9
Max no of characters per field:	120
Max no of characters per record:	8000

Really a spreadsheet with database capabilities, this is a very nice program using menus the initial letters of whose commands can be put together to construct very easily-understood macros (or "execs", as they're called here). The multi-screen capabilities make it able to handle large quantities of information, and searches using the find command looking for data in any field are permitted. Partial-key searches supported, but only one keyfield. Elementary graphics are also supported, more sophisticated graphics being available with the 8k ROM version.

The original manual was dreadful, but (after criticism in these pages) a new one plus a special tutorial was produced, making it much easier to access its full power.



SUPERBASE

Price:	£100 (starter pack £39.95)
Distributors:	Precision Software, 4 Park Terrace, Worcester Park, Surrey KT4 7JZ (tel: 01-330 7166)
Format:	Disk
Max no of records per file:	Disk-dependent
Max no of fields per record:	127 (64 on Starter)
Max no of screens per record:	4
Max no of characters per field:	255 (key/constant fields 30)
Max no of characters per record:	1107

It's nice to be able to state that the dearest program reviewed here is also well worth the money. Incorporating a really powerful Basic-like programming language (not available for the starter) which can be put into programs of up to 4k in length (which can be chained together for longer procedures), it is really an example of how to get the 64 to perform like a 256k 16-bit machine. Beginners should try the starter which can still be used to execute programs produced on the "big" version.

Partial-key matches supported in searches. Excellent manual, with tutorial plus audio tape. Several application disks available. Also available for the Plus-4 the C128 and the C8000 series.



We would like to thank Pilot Software City, Rathbone Place, London W1, for their help in compiling this survey.

CLASSIFIED

C16 Word Processor Text 16 Powerful word processor. Facilities include: auto centre text, variable tab, insert, amend, delete, copy, move text, right justified, word count etc. Fully menu driven with comprehensive easy-to-use instructions. Great value. Cassette £5.95.

C16 File Data 16. Takes the place of any card index. Facilities include: full sort, add, amend, delete records, password protection, save/load file, direct and special searches, print all/part records, variable fields etc. Cassette £5.95.

Both programs can be used with all direct connect C16 printers including 1520 printer/plotter. Fast delivery by first class mail. Send cheque/PO to A & C Software, 75 Oakthorpe Gardens, Tividale, W Midlands B69 2LF.

CBM64 software (originals). Easy Calc, Easy File, Easy Spell, Future Finance — £30 each or £100 lot. Home office, Z80 cartridge, £25 each. Busicalc, Fourth Protocol, Forth — £10 each. Colossus Chess, Hobbit — £8 each. Telephone 0963 63540 evenings/weekends.

Compunet modem for sale. New and unregistered, first year's subs free — £60. C2N deck, new, boxed — £20. Phone 0922 492039.

Vic-20 Bridge? Yes! Two 15K programs by computer professional/bridge amateur for self practice. Send £10 and cassette in s.a.e. to A.J. Hilton, 150 Harefield Road, Uxbridge UB8 1PW. Phone 0895 39100.

C16 starter pack for sale including joystick and nearly £100 software. First class condition — £130. Phone 021-526 5946 (Wednesbury).

Powerful budgeting program for the Commodore 64 computer. Transfer, multi-account and hard copy are some of the features. Send £4.95 to D. Gartrell, 99 Benjamin Road, Wrexham, Clwyd LL13 8EG. Home made program.

Vic-20 for sale 16K switchable, C2N, learning tapes, Flight Path 737 + many others. Worth £265 — sell around £75. Phone 0666 840304.

Vic-20 starter pack plus 16K RAM plus joystick plus £120 worth of games and books. Worth £250+ for only £150 o.n.o. Contact Craig on Nuneaton 381310.

Wanted Vic modem or 16K switchable RAM or machine code monitor for Vic-20. Send me manufacturer's name and asking price. Contact me at: Jimmy, 62 Husband Road, Forest Hill, Victoria 3131, Australia.

CBM64, C2N recorder, Quickshot II joystick, programmer's manual, various cassettes — £150. 1541 disk, Easyscript, 11 blank Scotch diskettes — £150. Telephone Peter Hemel, Hempstead (0442) 57074.

Commodore 64, C2N cassette, 1541 disk drive and over £350 worth of software and books, Easyscript, programming aids, top games. Only £375 for quick sale. Telephone 01-894 6875, Dave.

Commodore DPS 1101 daisywheel printer. 9 months old. Seldom used. Under guarantee. £250. 22 Honeypots Road, Mayford, Woking, Surrey. Tel: 66918.

Help wanted with Sword of Krakel. I need help urgently with this adventure. If you've solved this and would like to send me some clues, contact me at: Jimmy, 62 Husband Road, Forest Hill, Victoria 3131, Australia.

Commodore 64 software for sale. Beach-head, Chiller, Flight Path 737, Buck Rogers, Spy Hunter and The Hobbit. John McDonald, Shawmount Farm, Selkirk, Scotland. Tel: 21724 after 6pm.

Vic-20 starter pack + joystick + 16K RAM + 10 games + cassette recorder — £120. Just right for beginners. Consider splitting. Phone: Camb 207732.

Look! 4040 dual disk drive, 3022 tractor printer, PET/IEEE cable, IEEE/IEEE cable, unopened — Easy Spell, Easy File, Easy Script, Basic 4.0 manual. Whole lot for £300 (may split). Phone 07356 6092 (evenings).

Commodore international cartridge swap. Exchange your played-out cartridges for somebody else's played-out cartridges. Small charge per swap for postage. Interested? Contact Cartswap, 62 Husband Road, Forest Hill, Victoria 3131, Australia. State whether Vic-20, Commodore 64, Commodore Plus/4 or Commodore 16.

Vic-20 + intro to Basic 1. £60 worth of games including Gort, Sargon II Chess, Omega Race, Adventureland, Hunchback + games programming book by Virgin. Only £70 o.n.o. Phone (061) 434 1938 any evening.

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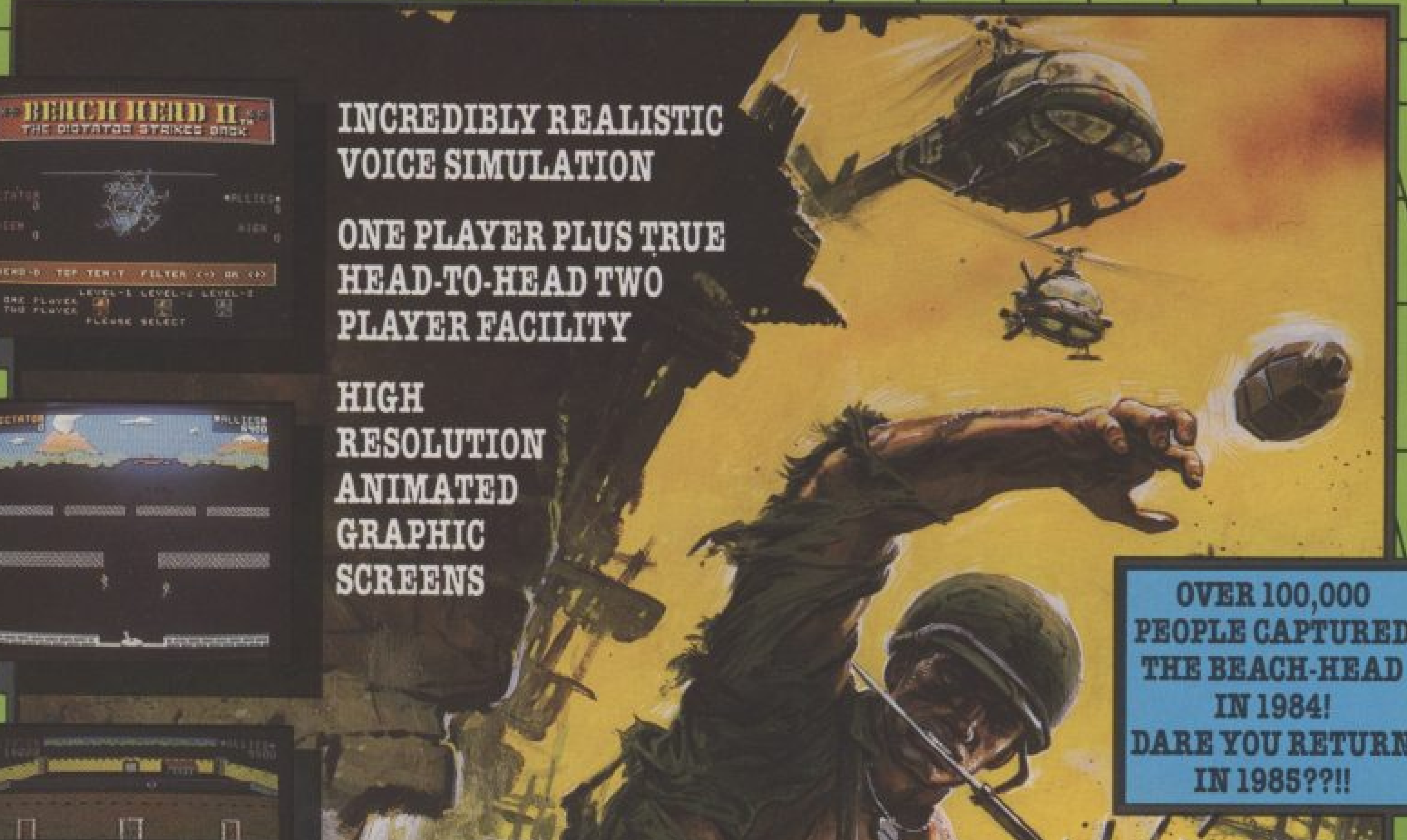
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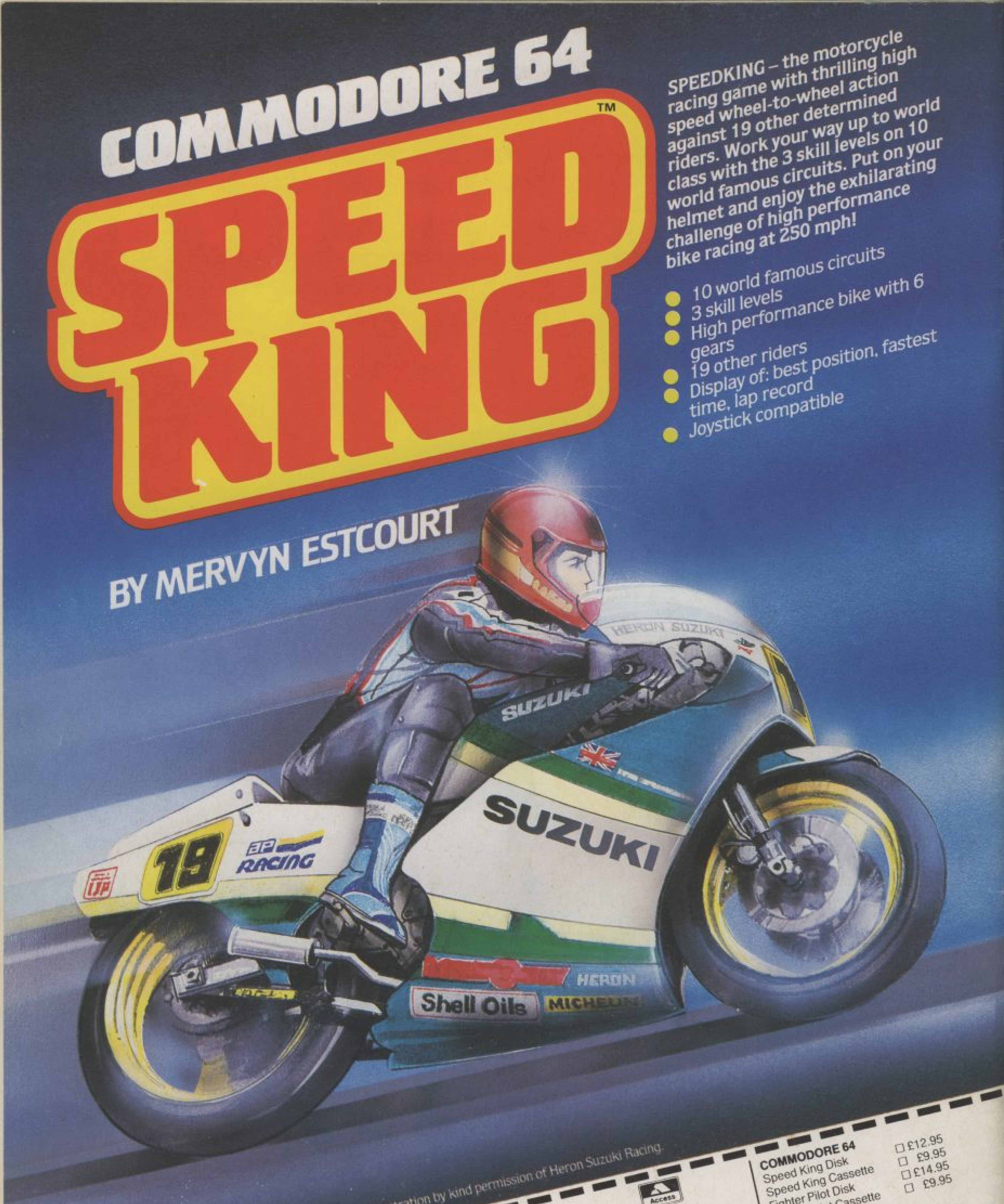
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